
IV. DESCRIPTION OF THE AFFECTED ENVIRONMENT

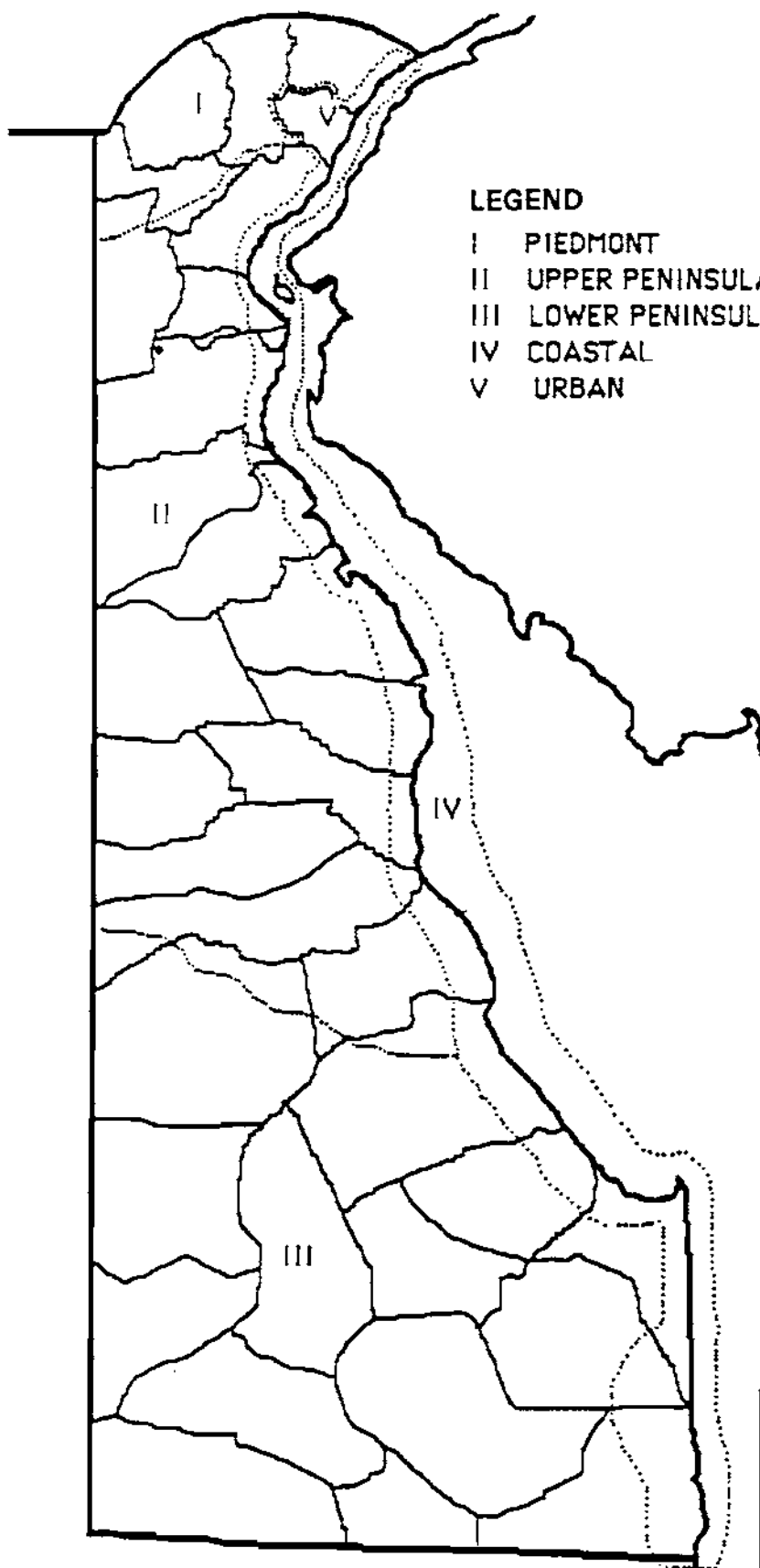
A. PHYSICAL SETTING

An analysis of the physical setting of the project area is critical to understanding the patterns of human settlement and land use. This is particularly so during the prehistoric and early historic periods when settlement was in large part controlled by environmental conditions, such as access to water and arable land. Understanding the ecological makeup of a project area may therefore aid in determining which locations have potential to contain historical and archaeological sites.

The environmental setting of northern Delaware and the project area is summarized in Custer and DeSantis (1986). The project area is in northern New Castle County and falls within the Pennsylvania Piedmont and Upper Peninsula (or Upper Coastal Plain) physiographic zones (Ames et al. 1989) (Figure IV-1). According to the Delaware Comprehensive Historic Preservation Plan, geographic zones, which are defined primarily by characteristics such as geology, drainage, soil types, and native flora and fauna, "provide the basis for developing and recognizing geographically coherent historic contexts and creating a framework for the management of historic resources" (Ames et al. 1989:32).

The Pennsylvania Piedmont includes parts of Pencader and White Clay Creek hundreds, and all of Mill Creek, Christiana, and Brandywine hundreds. Major communities in the zone are the City of Newark, and the towns of Elsmere, and Newport. The area is presently suburban in character. The northern and western parts of the Piedmont zone are characterized by low to steep hills and clay-like soil, mixed with some rock, that is rich and productive for agricultural use. Major topographic features in the zone are Iron Hill and Chestnut Hill, once noted for containing iron ore deposits. The Turnpike separates Chestnut Hill to the north and Iron Hill to the south. Elevations of these hills extend to about 300 feet above sea level. These hills also contain outcrops of jasper, a high-quality stone used by Native Americans in the production of projectile points and other tools. Many streams which once flowed into the Christina River covered the area at the time of early settlement. However, erosion and silting over time have since caused most of these streams to disappear or decrease in width. Those that remain are Red Clay Creek, White Clay Creek, Brandywine Creek, Pine Creek, Mill Creek, and Muddy Run. A range of tree species including oak, hickory, poplar, walnut, and ash are present in the Piedmont zone.

The Upper Peninsula, or High Coastal Plain physiographic area, has the largest land area of all the geographic zones in Delaware, extending from the southern border of the Pennsylvania Piedmont Zone through New Castle, Pencader, Red Lion, St. Georges, Appoquinimink, Blackbird, Duck Creek, Little Creek, Kenton, East and West Dover, North and South Murderkill, and Milford hundreds.



LEGEND

- I PIEDMONT
- II UPPER PENINSULA
- III LOWER PENINSULA/CYPRESS SWAMP
- IV COASTAL
- V URBAN



DELAWARE TURNPIKE IMPROVEMENTS



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Geographic Zones of Delaware

Source: Ames et al. 1989

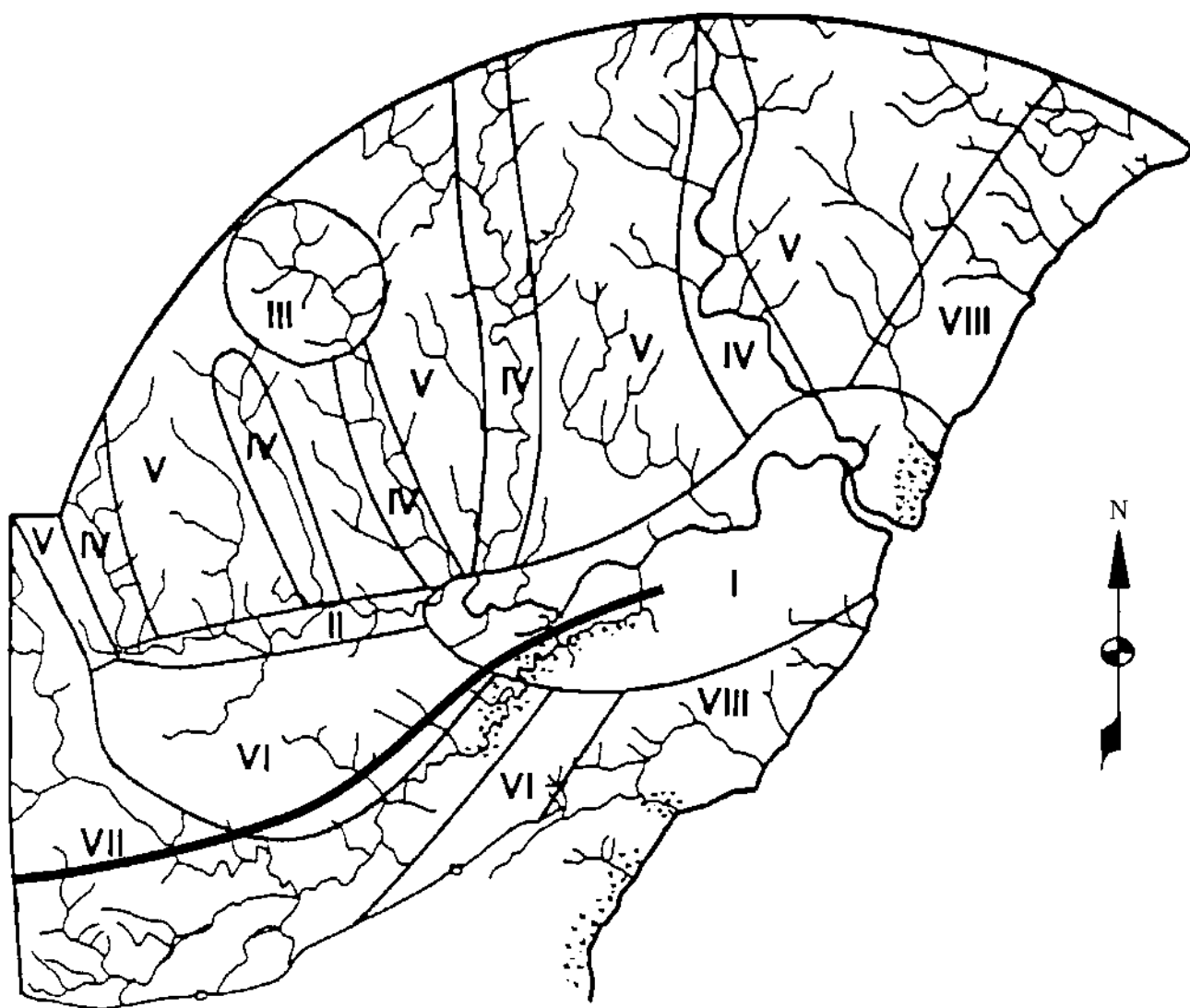
Figure IV-1

The High Coastal Plain, which represents the southeastern extension of the coarse glacial Columbia sediments, is characterized by level to gently rolling hills and sloping to steep hills. Elevations range from 130 feet to about 10 feet above sea level along watercourses and marshy areas. Soils range from medium-textured to moderately coarse, with varying levels of well- to poorly drained areas. Topographical features for this zone include Garrisons Lake, the whale wallows of Blackbird Forest, and Lums Pond. The range of tree species is similar to those found in the Piedmont. Small streams draining into larger rivers once covered the area, but few exist today due to centuries of erosion. Those that remain in or near the project area are natural features such as the Christina River and Duck Creek, and man-made drainages like the Chesapeake and Delaware Canal, built in 1829 across the Delmarva Peninsula to connect the Chesapeake Bay and Delaware River trade routes.

The project area is drained by the Christina River (known historically as Christiana Creek), which flows eastward toward Wilmington and the Delaware River. South of Newark, at the State Route 896 interchange, the Turnpike crosses the Christina River. The right-of-way also passes the headlands of several smaller tributaries of the Christina. Near Newport and State Route 141, the Christina joins with White Clay Creek to form Churchmans Marsh. Churchmans Marsh is a large swampy area that is underlain by thick impermeable clays dating to the Cretaceous and Pleistocene periods. The Turnpike crosses the 100-acre marsh on an earthen causeway. Formed around 8,000 years ago, Churchmans Marsh became brackish circa 3000 B.C. and, through time, has provided a rich variety of environmental zones that would have been favorable for prehistoric exploitation. Because it was formed through inundation caused by sea level rise, Holocene land surfaces may be preserved beneath the present wetlands at Churchmans Marsh. Cobble beds found along the Christina River near the marsh and in headland locations also would have provided lithic resources for Native Americans (Custer and DeSantis 1986:19).

The Turnpike crosses three edaphic zones, that is, areas with similar environmental and topographic conditions through time. These zones are the Lower Christina/Churchmans Marsh, the Interior High Coastal Plain, and the upper Christina drainage (Figure IV-2). The Upper Christina drainage contained a wide diversity of natural resources through time, especially both primary and secondary raw material sources for stone tool manufacture (Custer and Galasso 1980). The Churchmans Marsh/Lower Christina area "provides the highest carrying capacity and richest resources through time" in northern Delaware (Custer and DeSantis 1986:23). In contrast, interior areas of the High Coastal Plain, located away from water settings, exhibited relatively low resource diversity or productivity.

Soils within the project area are classified as belonging to the Neshaminy-Aldino-Watchung and Sassafras-Fallsington-Matapeake associations (Matthews and Lavoie 1970). Neshaminy-Aldino-Watchung soils are described as level to steep, well-drained to poorly drained soils found in upland settings in the areas of Chestnut Hill and Iron Hill. Sassafras-Fallsington-Matapeake soils are level to gently rolling, well-drained to poorly drained upland soils. Tidal marshes and poorly drained soils are common in the vicinity of Churchmans Marsh. The western portion of the project area includes areas of good agricultural soils (agricultural capability unit II) with smaller pockets of prime agricultural soils (agricultural capability unit I) present.



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|---------------------------------------|----------------------------------|
| I — Lower Christina-Churchman's Marsh | V — Piedmont Uplands |
| II — White Clay Creek/Fall Line | VI — Interior High Coastal Plain |
| III — Hockessin Lowlands | VII — Upper Christina |
| IV — Piedmont Stream Valleys | VIII — Delaware River Shore |
| — Delaware Turnpike Corridor | |

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Edaphic Zones in Northern Delaware

Source: Custer and DeSantis 1986

Figure IV-2

B. PREHISTORIC OVERVIEW

Delaware's prehistory is generally studied from a cultural ecological approach in which Native American peoples adapted to changing environmental conditions. Custer (1984) defines four temporal periods for the state: Paleoindian (12,000 - 6500 B.C.), Archaic (6500 - 3000 B.C.), Woodland I (3000 B.C. - A.D. 1000), and Woodland II (A.D. 1000 - 1600).

Since the last glaciation, about 15,000 years ago, the environment of northern Delaware has been altered dramatically. Through the analysis of soils, topography, and pollen evidence, archaeologists have reconstructed environmental settings for northern Delaware. Characteristics of five environmental episodes, Late Glacial, Pre-Boreal/Boreal, Atlantic, Sub-Boreal, and Sub-Atlantic/Recent, are described in Table IV-1 for the Upper Coastal Plain, the Fall Line Zone, and the Piedmont Uplands. In general, these climatic episodes can be related to changes in prehistoric culture, including technologies, the composition of sites, and the distribution of sites across the landscape.

Delaware's first inhabitants, referred to as Paleoindians by archaeologists, lived at the end of the Pleistocene and into the early Holocene, as the glaciers finally retreated from the North American continent. Late Glacial and Boreal/Pre-Boreal environments produced a mosaic of deciduous, boreal, and grassland environments that supported a variety of plant and animal resources. Paleoindian adaptation emphasized the hunting of wild game supplemented by the gathering of wild plant foods. Stone tool technology in this period was focused on high quality lithic materials. Quarry, quarry/reduction, quarry-related base camps, base camps, and procurement sites have been described for the Paleoindian period (Custer 1986:31-57).

At least 17 Paleoindian sites have been identified in northern Delaware (Custer and DeSantis 1986:33). Three sites with Paleoindian components are located relatively close to the project area: N-3722 (7NC-E-21), N-3734 (7NC-D-15), and N-3736 (7NC-D-34). The concentration of primary outcrops, termed the Delaware Chalcedony quarry complex, and secondary cobble stone resources may explain the large number of early sites in this area (Custer, Watson, and DeSantis 1986).

During the Archaic period (6500 - 3000 B.C.), Delaware's native populations adapted to fully emerged Holocene environments. As the climate grew warmer, grassland areas diminished and browsing animals, such as deer, flourished. The rise in sea level helped create the area's swamps and marshes, such as Churchmans Marsh, although use of estuarine resources appears intermittent. Bifurcate projectile points and the addition of groundstone tools, such as axes and grinding stones, are diagnostic for this period. Selection of lithic raw materials also expanded as Native Americans exploited a variety of newly developed environmental zones. Custer (1986:58-83) describes three site types for the Archaic, macro-band base camps, micro-band base camps, and procurement sites.

TABLE IV-1
ENVIRONMENTAL SUMMARY FOR NORTHERN DELAWARE

Environmental Episode	Piedmont Uplands	Fall Line Zone	Upper Coastal Plain
Late Glacial 12,000 to 8080 B.C.	Boreal forest Limited grasslands	Deciduous gallery forests; Boreal forests on slopes Isolated grasslands in flat areas	Boreal parkland with some gallery deciduous forests
Pre-Boreal/Boreal 8080 to 6540 B.C.	Closed Boreal forest	Mixed deciduous and Boreal forests	Limited grasslands within extensive Boreal forest
Atlantic 6540 to 3110 B.C.	Mesic deciduous forests Some swampy areas	Mesic deciduous forests Extensive swamps in poorly drained areas	Mesic deciduous forests Some swamps in poorly drained areas
Sub-Boreal 3110 to 810 B.C.	Oak-Hickory with some limited grasslands	Deciduous gallery forests along both swamps and watercourses Mix of Oak-Hickory forests and grasslands	Mix of Oak-Hickory forests Some swamps in poorly drained areas
Sub-Atlantic 810 B.C. to present	Oak-Chestnut forest with mixed mesophytic communities	Oak-Chestnut forest Mixed mesophytic communities along Fall Line scarp	Oak-Chestnut-Hickory dominant. Chestnut-pine on moderate slopes; some mixed mesophytic communities

Source: Custer and De Santis 1986.

The Woodland I period (3000 B.C. - A.D. 1000) is associated with adaptations to estuarine and riverine settings as climate entered a maximum warm and dry phase, the Sub-Boreal. This period marks the beginning of sedentary lifeways among Native Americans in Delaware. Greater population densities, more complex social organization, extensive trade and exchange systems, and burial ceremonialism are visible at Woodland I sites. Early Woodland I sites are significantly larger than their Archaic counterparts and include remains of houses and storage pits. Subsistence during the Woodland I period was based on intensive gathering of locally available wild plant foods. Used in the preparation of plant foods, stone bowls, and later fired-clay ceramic vessels, are diagnostic of this period. Custer (1986) defines five Woodland I site types: generalized base camps, macro-band camps, micro-band camps, staging sites, and procurement sites. The Churchmans Marsh area was the setting for a distinctive archaeological culture, identified as the Clyde Farm Complex, ca. 3000 - 500 B.C., and the Delaware Park Complex, ca. 500 B.C. - A.D. 1000 (Custer 1984).

Although distinguished by horticultural subsistence in other areas of the Middle Atlantic, the Woodland II period (A.D. 1000 - 1600) in northern Delaware is marked by a continuation of the intensified gathering and hunting adaptation. Although Woodland II sites are often in the same environmental settings as sites with Woodland I components, the absence of storage pits and semi-subterranean houses suggests that Woodland II populations were less sedentary than some Woodland I groups. Social complexity and regional exchange networks that arose with sedentary lifeways during the Woodland I period appears to have diminished during the Woodland II period.

After 1600, native groups in Delaware came under the influence of the Susquehannock Indians of southeastern Pennsylvania. Only one northern Delaware site, 7NC-E-42, can be dated to the Contact Period (A.D. 1600 - 1750) (Custer and Watson 1985). Through most of the seventeenth century, Delaware's natives attempted to maintain their traditional lifeways while adapting to the new social and political conditions that came with European colonization. By 1750, Native American culture in Delaware had, for the most part, disappeared.

C. HISTORICAL OVERVIEW

The Counties of Delaware are divided into hundreds, a division of land common to the early American territories governed by the English. The origin of this English term is uncertain; however, it is believed to refer to "100 hides of land." In any case, the term predates the first act defining the territory of New Castle County in 1775 (Scharf 1888:612).

The project area extends through the following hundreds in northern New Castle County: Pencader, White Clay Creek, Christiana, and New Castle hundreds, as well as Newark City. A field survey of historic resources in the project area identified properties in Pencader Hundred, White Clay Creek Hundred, New Castle Hundred, and Newark City. Except for several resources in the vicinity of the New Castle County Airport (Wilmington Airport), all identified properties are in the southwest portion of the project area. This finding is not surprising given that lands in the northeast half of the project area, from Christiana to the

outskirts of Wilmington, are almost completely marshland. Historically, this region was not well suited to agricultural improvements. In addition, industrial development and construction of highways since the mid-twentieth century has resulted in the loss of large segments of the historic landscape and resources.

The following historical overview was developed according to the chronological divisions presented in the Delaware Comprehensive Historic Preservation Plan (Ames et al. 1989). These are: 1630-1730, Exploration and Frontier Settlement; 1730-1770, Intensified and Durable Occupation; 1770-1830, Early Industrialization; 1830-1880, Industrialization and Early Urbanization; and 1880-1940, Urbanization and Early Suburbanization.

1630-1730: Exploration and Frontier Settlement

The earliest known European to enter Delaware was Henry Hudson, who, on August 28, 1609, sailed to the mouth of the Delaware Bay under the patronage of the Dutch East India Company. Captain Samuel Argall of Virginia sailed up the bay in 1610 and named the territory "Delaware" for Thomas West, Lord DeLaWarr. Subsequent to these explorations, trading colonies were set up by the Dutch West India Company by 1621. The first European settlement within Delaware was a Dutch whaling colony called Zwaanendael (now Lewes). Established in 1630, the colony was abandoned in 1631 following an Indian attack on the settlement. The first permanent settlement was initiated in 1638, when a group of Swedes established Fort Christina, near present-day Wilmington, under the auspices of the New Sweden Company.

Following the establishment of Fort Christina, a dispute arose between the Swedes and the Dutch over the ownership of the land on which Fort Christina was situated. In 1651, the Dutch built Fort Casimir only six miles from Fort Christina in an attempt to intimidate the Swedes and to prevent them from gaining control of trade in the region. Despite an attempt by Peter Stuyvesant to rout the Swedish fort, the Swedes, under Johan Rising, captured Fort Casimir in 1654 and renamed it Fort Trinity (De Cunzo and Catts 1990; Delaware Division of Historical and Cultural Affairs 1976). The Dutch, however, recaptured the fort and the claim to the territory, although Swedish and Finnish settlers were permitted to remain.

Circa 1656, the West India Company sold the territory from Bombay Hook to the Christina River (including Fort Casimir) to the Dutch city of Amsterdam. Subsequent to this transaction, the town of New Amstel was established in the vicinity of Fort Casimir. The West India Company relocated their capital to Fort Altena (Fort Christina). In 1663, the West India Company sold their remaining holdings in Delaware to the City of Amsterdam.

Dutch ownership of the Delaware territory was challenged by the British, who claimed that the land was part of Lord Baltimore's proprietorship (De Cunzo and Catts 1990). In 1664, Sir Robert Carr entered the Delaware Bay with the intention of claiming the colony for the British. Carr succeeded, and another political transition ensued as Delaware became an English colony. The similarities between British and Dutch governmental structures allowed for a relatively peaceful transition.

After the British assumed power, the settlement called New Amstel by the Dutch was renamed "New Castle," and the jurisdictions of Whorekill (Zwaanendael), New Castle, and Upland became counties (Delaware Division of Historical and Cultural Affairs 1976). In 1682, the New Castle area was included in the new colony of Pennsylvania established by William Penn for the English crown. To encourage settlement, Penn typically granted parcels of 500 acres to families, most of which were English and Welsh (Ames et al. 1989; Coleman et al. 1990).

As in the rest of the Middle Atlantic, farming was the principal economic pursuit of early settlers in Delaware (Ames et al. 1989). Crops, such as wheat and corn, were grown on relatively self-sufficient farms with surplus produce sent to local mills to be processed. Early farms were characteristically located near navigable water, as the region lacked a reliable system of roads, and those that existed were usually in poor repair (Coleman et al. 1990). Flour was transported to Philadelphia, where it was loaded onto ships that carried the commodity to overseas markets. The grain trade proved to be profitable for the growers, millers, and shippers. Early trade centers, including Christiana Bridge, Cantwell's Bridge (now Odessa), and Newport, were established as shipping and marketing centers (Catts et al. 1989a).

Scharf notes that in 1672, a patent for 800 acres, known as "Muscle Cripple," was granted to John Ogle and three other men. It should be noted that the term "cripple" is an archaic term for low marshlands. This tract is known as Churchmans Marsh today, and remains as one of the most visible natural features in the project area. In 1672, this tract extended about a mile along White Clay Creek, near Bread and Cheese Island. Over the next 30 years, the Ogle holdings were transferred to other parties. In 1702, under the ownership of John Smith, the Muscle Cripple tract comprised 1,060 acres, extending from White Clay Creek to the Christina River, with the road to Christiana (present-day Route 273) bisecting the property (Scharf 1888:932).

Scharf (1888) notes that two large tracts of land, known as "Northampton" and "Eagles Point" were surveyed in White Clay Creek Hundred between August 1682 and December 1683. Both of these tracts, in addition to others in the area, were owned by John Ogle of New Castle. According to Scharf (1888), Ogletown was named prior to 1667, the year when John Ogle settled in this country. At the time of Ogle's death, his property was inherited by his sons, Thomas and John. In 1739, Thomas Ogle extended these holdings along the Christina River, between Christiana and Ogletown, and later that year, as far west as Newark. By the late eighteenth century, the whole of the Ogle estate passed out of family ownership as the land was divided by his heirs into small parcels and sold off.

In 1701, William Penn granted several Welsh settlers a tract of about 30,000 acres in the western portion of Pencader Hundred near "Iron Hill," where iron ore was found as early as 1661. The area later became known as the Welsh Tract and extended into Cecil County, Maryland. The region became the site of several iron mills, blast furnaces, and forges established in the first decades of the eighteenth century. Early iron manufactories in the vicinity of Iron Hill included a bloomery forge built by Samuel James, the Abingdon (Abbingdon) Iron Works, which operated from 1726 until 1734, and a furnace started by Sir

William Keith, the Royal Governor of Pennsylvania and the Three Lower Counties (Delaware Division of Historical and Cultural Affairs 1976:22).

In 1722, Keith bought land along the Christina River in order to build an iron plantation that became known as "Keithsborough." At the time, there were already dams and mills and possibly bloomery forges on the land he purchased. After two years of operation, however, iron ore deposits were substantially depleted and Keith gave up his iron plantation in 1726. He then sold the mill seats to John England, an iron master from Maryland (Benenson and Bower 1990).

The site of Keith's furnace, which was the third iron blast furnace erected in British America (Benenson and Bower 1990), is a component of the Cooch's Bridge Historic District (Heite, Norton, and Troy 1972). Iron blast furnaces, the largest type of early iron works, required extensive labor in order to maintain operation. Limestone flux, iron ore, and charcoal were added daily in the smelting process. The furnace was then tapped, and iron was formed into bars known as pigs. Though this process was labor intensive, the manufacturer was able to produce far more iron with a blast furnace than with a bloomery forge, which only produced a single iron bar a day (Delaware Division of Historical and Cultural Affairs 1976).

In addition to iron manufacturing, there were other industries in the project vicinity by the late 1600s. A brickyard, established in New Amstel by the Dutch in 1657, remained in operation until the nineteenth century (Delaware Division of Historical and Cultural Affairs 1976). Another industry which responded to the increasing need for local building materials was lumber processing. Sawmills were erected in the New Castle County area as early as 1680 (Federal Writers Project 1938). Although there was a need for lumber in Britain as well as in the colony, brickyards and sawmills in the Northern Delaware region probably produced more for the local market than for export (Catts et al. 1989b).

1730-1770: Intensified and Durable Occupation

John England sold the Keith property to Thomas Cooch, a miller and businessman, shortly after his arrival from England in 1746. In addition to the Keith lands, Cooch also purchased acreage and mills from William James, an original settler of the Welsh Tract. By the time Thomas Cooch settled in the area, iron manufacturing had nearly ceased at Iron Hill due to insufficient supplies of limestone used in the flux process. Cooch diversified his enterprise by establishing gristmills at Cooch's Bridge. Now known as the Dayett Mill, the renovated Cooch Mill continues to operate (Benenson and Bower 1990).

The project area did not receive many new settlers during the first decades of the eighteenth century, but immigration increased significantly between 1725 and 1750 (Coleman et al. 1990). By this time, much of the most desirable land had been deeded and new immigrants settled on parcels that were subdivided from the original Penn patents. As a result, the average size of farms was reduced from about 500 acres in the mid- to late seventeenth century to about 100-200 acres by about 1750 (Coleman et al. 1990). In addition, farmsteads were established on land distant from navigable water sources (Hoffecker 1977).

Farmers traded in grains, mainly wheat, and shipped their goods via the rivers to area millers for the production of flour. Delaware farmers also grew tobacco, maintained sheep for wool, and gathered oak bark for tanning. These products were mostly sold for local consumption (Delaware Division of Historical and Cultural Affairs 1976:34).

During the eighteenth century, northern Delaware was characterized by the growth of small villages that functioned as the processing and exchange centers for agricultural products and manufactured goods. Several villages, including Cooch's Bridge, Glasgow, Summit Bridge, and Porter's Station, were founded in Pencader Hundred by the late eighteenth century (Scharf 1888:984). Although Philadelphia represented the region's major economic hub, the population of towns such as Wilmington, Newport, and Stanton developed into important urban centers (Coleman et al. 1985). Wilmington, in particular, boomed as a port where goods were collected from inland regions to be shipped to Philadelphia.

Prior to the mid-eighteenth century, few roads existed in the area, and those trails and pathways that did exist served mainly to connect small settlements and villages along waterways. In 1723, Welsh settlers petitioned the New Castle and Cecil county courts to open a road from the Head of Elk (near Elkton, Maryland) to Christiana Bridge and New Castle. This road may coincide with the alignment of the later road known as Old Baltimore Pike. By 1739, 12 iron plantations were established, and approximately 8 dwellings were constructed in the area (Kise Franks & Straw, Inc. 1987).

Over the next 25 years, roads and settlements became well established. A 1763 plat map for the New Castle County Levy Court shows the pike, houses owned by Thomas Cooch, Esq., and Alexander, Samuel, and Robert McAntier, and the towns of Christiana Bridge and Newark. These two towns were the largest in the area, with Christiana Bridge becoming the hub for trade and population along the Christina River and Newark developing as a crossroads town (Kise Franks & Straw, Inc. 1987). By 1737, Christiana Bridge contained 10 dwellings (Kise Franks & Straw, Inc. 1987). Because of its location along the trade route between Philadelphia and Baltimore, the town served as an important station for the shipment of goods and war supplies during the Revolutionary War. The City of Newark, founded in the early eighteenth century by English, Scots-Irish, and Welsh colonists, received its charter from King George II in 1758. This crossroads town was both a farming center and the location of saw and grist mills (Lopata et al. 1987:10).

The increase in settlement of inland areas led to the opening of new roads, including the general alignments of present-day State Route 4 (Chestnut Hill Road) and State Route 896. Road construction accelerated following an Act of Legislature in 1752, which provided for the building of roads and bridges. However, maintenance was a persistent problem, and, subsequently, another act was passed which "established a statewide system of King's Roads which were to receive the highest priority for maintenance and improvement" (Coleman et al. 1990:11).

1770-1830: Early Industrialization

Shortly before the Revolutionary War, Thomas Cooch petitioned the County Court to rebuild the bridge at his mill and increase water rights. However, before these improvements could be carried out, British troops under Sir William Howe invaded the area and burned down Cooch's Mill and Bridge. The Battle of Cooch's Bridge, the site of the only Revolutionary War action on Delaware soil, was fought on land now included in the Cooch's Bridge Historic District (Benenson and Bower 1990).

The encounter began when General Howe and the British troops, with the intention of reaching Philadelphia from New York, changed course from the Delaware River to the head of Elk River (near present-day Elkton, Maryland) via Chesapeake Bay. Once the British troops reached land, they moved on toward Cooch's Bridge. General George Washington sent a small group of American forces to fight a holding action at the bridge. On September 3, 1777, British troops encountered American soldiers near Glasgow, and skirmishing continued a few miles beyond Cooch's Bridge. American forces retreated northwards across the project area toward the Welsh Tract Baptist Church to join Washington and the troops waiting near Stanton. The British forces occupied the territory for several days, during which time they burned Thomas Cooch's mill and other structures in the area (Catts et al. 1989b; Heite, Norton, and Troy 1972). Cooch's house was taken over as a headquarters for General Cornwallis. The British then moved on to Philadelphia by way of Chadds Ford on the Brandywine River. Washington and his troops followed Howe but ultimately lost the Battle of the Brandywine (Benenson and Bower 1990).

Although the 1777 Battle of Cooch's Bridge was the only battle of the American Revolution that was carried out in Delaware, the repercussions of the war were felt throughout the region. For example, local commerce was affected by the military and political actions that occurred in Philadelphia, where much of the region's trading activity took place.

In northern Delaware, farming remained important for both subsistence and for trade during this period. As in previous eras, wheat remained the most widely produced crop. Other grains grown include rye, corn, and barley. Livestock were raised for additional food and as a marketable commodity. In the late eighteenth century, however, there was a slump in agricultural production as a result of generations of farming methods that resulted in erosion and the depletion of soil nutrients. Farmers who could no longer profit from their land either left the state for western regions or became involved in the developing industrial economy of northern Delaware.

This pattern explains the sluggish population growth for the early part of the nineteenth century; the population of New Castle County increased from 25,661 in 1800 to only 27,899 by 1820. The numbers of slaves, however, expanded rapidly during this period; for example, in Pencader Hundred, slaves represented 9.9 percent of the total population in 1800 but accounted for one-third of the inhabitants in 1820 (De Cunzo and Catts 1990:54-56).

Concurrent with the abandonment of unproductive farms was the rapid expansion of industries in Delaware, particularly in the upper region of the state where an infrastructure supporting commercial activities had long been established. Textile mills, sawmills, snuff mills, tanneries, and paper mills were among the industries that emerged during this time. Creeks in and around the project area, including White Clay Creek and the Christina River, proved to be excellent sources of water power for the many mills that were constructed, and it was not unusual for several mills to be located along the same mill seat (Delaware Division of Historical and Cultural Affairs 1976).

The War of 1812 had an impact on Delaware, even though there were no land battles fought in the state. In the project area, textile mills proliferated as the need for cotton and woolen goods increased. However, after the conclusion of the war, the re-introduction of imported commodities resulted in a slight economic slump in the state (Delaware Division of Historical and Cultural Affairs 1976).

The development of a network of turnpikes in the area is closely tied to early industrialization in New Castle County. Widely traveled routes related to the project area include the Newport and Gap Turnpike, begun in 1808, and the New Castle and Frenchtown Turnpike, opened in 1816. By 1817, seven miles of the Elk and Christiana Turnpike had been constructed in the vicinity of present-day Old Baltimore Pike. Toll houses for the turnpike were placed at Cooch's Bridge and at Smalley's Dam Road. In the years that followed, north-south routes were established in order to connect the east-west turnpikes, notably the north branch of Salem Church Road (within the Turnpike project area) and South Chapel Street (present-day State Route 72) (Catts et al. 1989b; De Cunzo and Catts 1990; Delaware Division of Historical and Cultural Affairs 1976). These and other roads represented the main transportation routes in the area until the construction of railroad lines, which, by the mid-1800s, had superseded this turnpike system.

The opening of new roads, the construction of the Chesapeake and Delaware canal system, and the eventual establishment of railroads contributed to the decline in importance of towns such as Christiana, Newark, and Newport, which prospered during the previous century when water travel was the primary transportation system. Wilmington, however, continued to thrive; the town was a principal hub of activity through which goods were shipped to and from the nearby ports of Philadelphia and Baltimore, and served as a central marketplace for regional goods.

1830-1880: Industrialization and Early Urbanization

In 1829, the Chesapeake and Delaware Canal was built across the Delmarva peninsula to connect the Chesapeake Bay and Delaware River cargo lines. Prior to the canal's construction, a cargo ship coming from the Delaware River had to travel around the Delaware and Maryland peninsula in order to reach the Chesapeake Bay. The building of this canal facilitated trade among towns located in Maryland, Delaware, and southeastern Pennsylvania that would otherwise not have been considered trading centers (Kise Franks & Straw, Inc. 1987).

The period preceding the Civil War was characterized by further internal improvements, the advent of the railroad being the most significant (Figure IV-3). The New Castle and Frenchtown line was the first railroad constructed in New Castle County. Begun in 1823 and completed in the 1830s, the New Castle and Frenchtown Railroad was built along the same route as the New Castle and Frenchtown Turnpike, to the southeast of the project area (Figure IV-4). The New Castle and Frenchtown Railroad also connected to the Chesapeake and Delaware Canal. In this way, bulk commodities were transported via the canal and shipped to local markets by train.

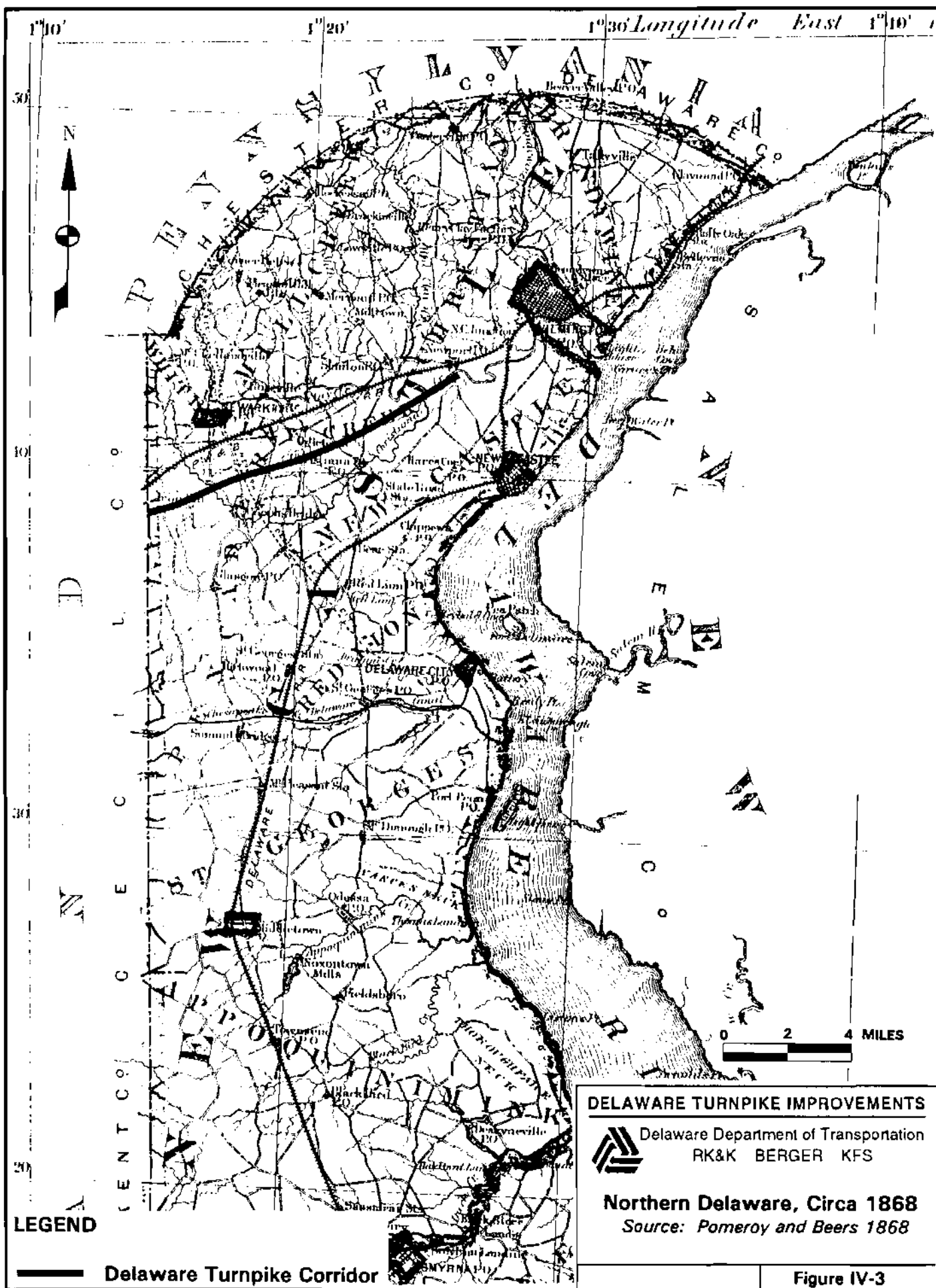
Both the turnpike and the canal systems failed when the Philadelphia, Wilmington, and Baltimore Railroad was completed in 1838 and connected New Castle County to the commercial hubs of Philadelphia and Baltimore. This line roughly parallels the existing Turnpike to the north (see Figures IV-3 and IV-4). Other companies built main lines and spurs within and near the project area, including the Delaware Railroad line, completed in 1856, which connected Delaware's lower counties with major towns such as New Castle and Newark.

Railroads altered the character of towns in northern New Castle County, spurring the trend toward urbanization. As illustrated in Figure IV-4, towns such as Newark and Newport, whose economies had faltered in previous decades, began to thrive as a result of their location on principal railroad routes (Pomeroy and Beers 1868). Other towns were not so fortunate, however. By the mid-nineteenth century, towns such as Christiana and Ogletown, once bustling small market communities, had very little commercial activity.

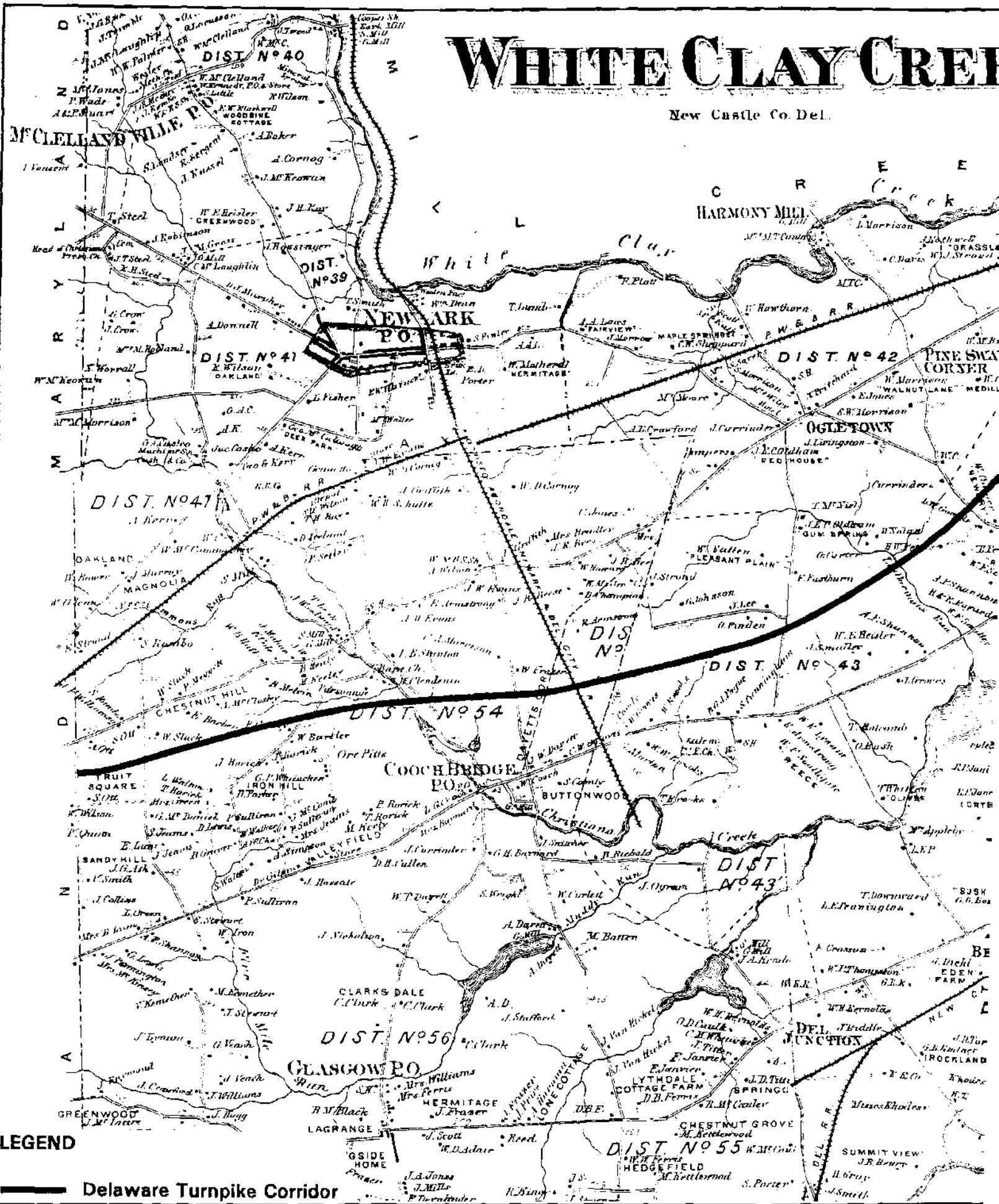
Although more people were now living in urban settings than in previous times, this did not mean the end of farming in the area. On the contrary, there was an increasing demand for fresh produce in places such as Wilmington. This demand was met by enterprising farmers who produced a diverse array of fruits, vegetables, meats, and dairy products that were sent to urban markets by railroad. Improvements in agricultural techniques, coupled with the region's extensive and accessible transportation network, stimulated a revival of farming as a lucrative pursuit. More land went into farmland throughout the state during this time: in New Castle County in 1850, 80 percent of the total acreage was in farmland, and by 1870, that number had increased by 10 percent (De Cunzo and Catts 1990:69).

Because of the considerable demand for local produce, farmers in the project area and elsewhere in Delaware cultivated fewer crops for export, such as corn and wheat. Instead, they concentrated their efforts on producing orchard crops, a wide variety of fruits and vegetables, and dairy products. Beginning in the 1830s, peach horticulture became an important commercial pursuit in New Castle County. During the mid-nineteenth century, until the 1870s when a widespread blight wiped out entire orchards, Delaware often led the country in peach production.

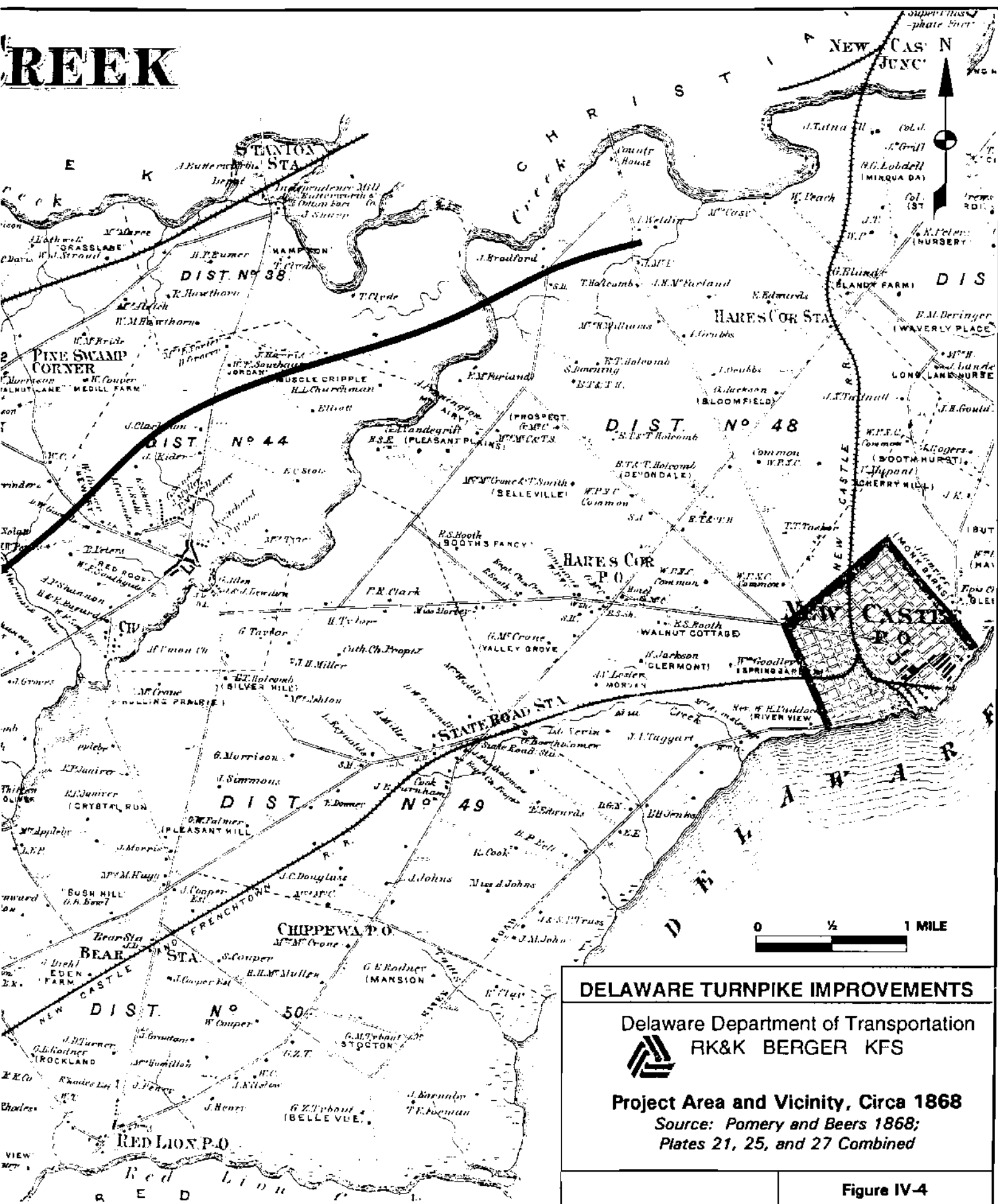
In the urban areas such as Wilmington, most workers were employed in the many mills and factories. Textile mills, leather tanneries, and machinery factories represented the major industries in the project area in the mid-nineteenth century. The railroad industry had a dual role in boosting the region's industrial economy. Not only were goods transported in and out



New Castle Co. Del.



REEK



of the area by train, but many workers were employed in the manufacture of railroad cars. Iron and wooden steamship manufactories also flourished. Pusey and Jones established a steamship building operation on the Christina, which flourished until about 1870, when the industry began to decline in the region.

By the advent of the Civil War, the project area was dominated by the presence of several urban centers, e.g., Newark and Wilmington, surrounded by small agricultural communities and farms. Northern New Castle County was the chief supplier of manufactured goods to the rest of the state, and Wilmington rivaled Baltimore and Philadelphia as an industrial hub. The region's economy was only briefly affected by the war, and no battles were fought near the project area.

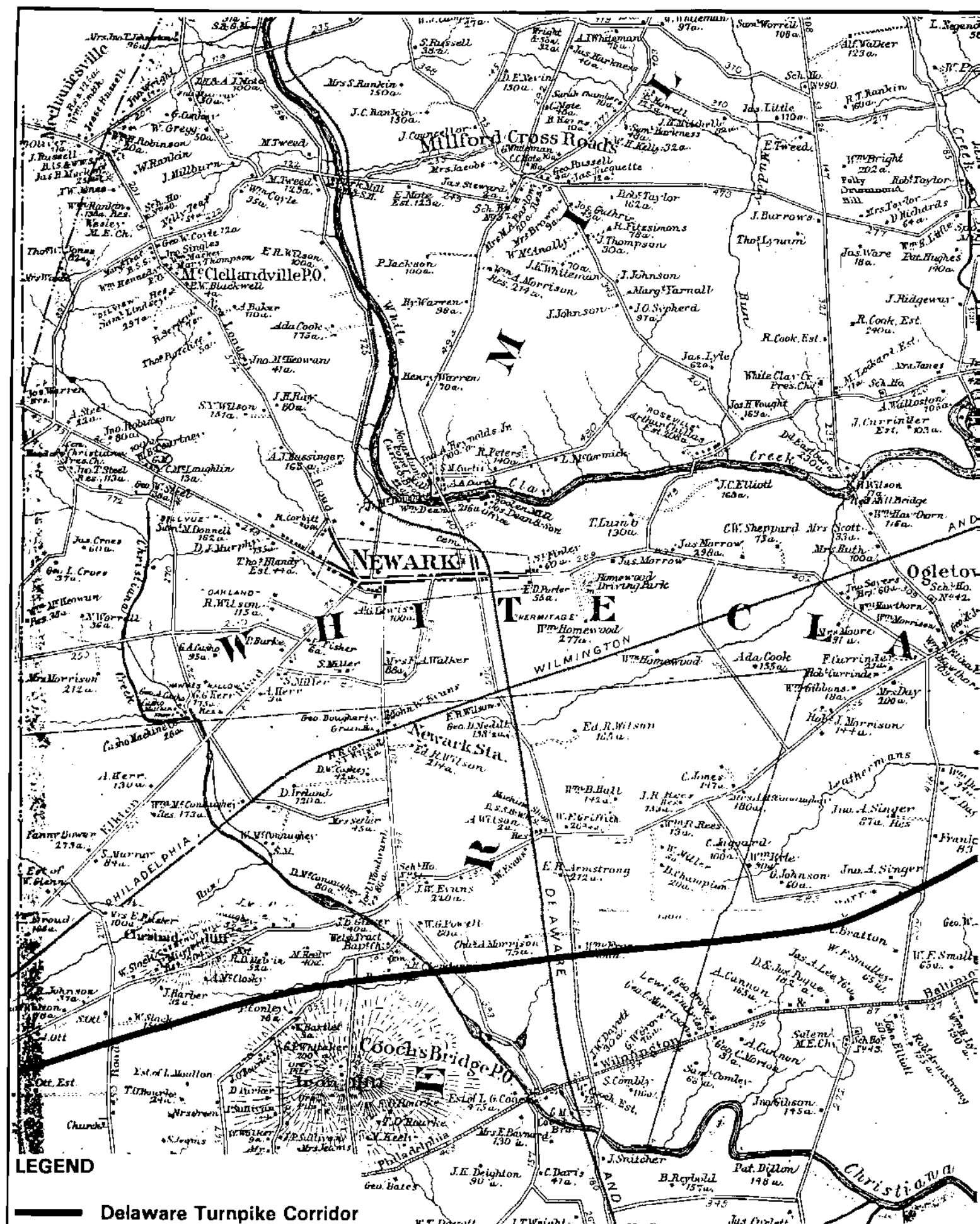
1880-1940: Urbanization and Early Suburbanization

The industrial economy of the northern Delaware region continued to thrive into the twentieth century. By 1907, Wilmington was the seventh leading manufacturing center in the United States (De Cunzio and Catts 1990:84). The continued prosperity of the project area can be attributed to the steady supply of laborers, the extensive transportation system, and the availability of locally produced raw materials and foodstuffs.

While the cities were becoming industrial centers, the Turnpike project area remained essentially rural during the late nineteenth century. Comparison of historic atlases from 1868, 1881, and 1893 shows relatively little development in the project area during this period (Baist 1893; Hopkins 1881; Pomeroy and Beers 1868). The road network that had been established in the middle of the century continued to serve as the major transportation network (Figures IV-5 and IV-6). These roadways were supplemented by railroad lines that connected the major commercial and industrial centers.

The Turnpike corridor extends through the area located between Old Baltimore Pike and State Route 4 (Chestnut Hill Road), which are both shown on the 1868 Pomeroy and Beers atlas (see Figure IV-4). This map also shows Main Street/Ogletown Road (present-day Route 273). Between 1868 and 1881, as represented on historic atlases, present-day Churchmans Road was established. This road served as a route from Hares Corner near New Castle to Christiana Road (present-day Route 4). Old Baltimore Pike is shown as the "Old Philadelphia Wilmington & Baltimore" route on the 1881 Hopkins atlas (Figure IV-5) and as the "Philadelphia Wilmington & Baltimore Turnpike" on the 1893 Baist atlas (Figure IV-6).

The establishment of a network of roads, including the Dupont Highway in 1923, made it easier for farmers to reach markets throughout the eastern seaboard. Farming during this period remained specialized, with orchard crops, dairy items and other perishables being the most profitable and widely produced. However, after about 1910, many farms in the project area vanished as a result of a need for housing, especially around Wilmington, where most of New Castle County's population lived. This trend of suburbanization continued into the twentieth century.



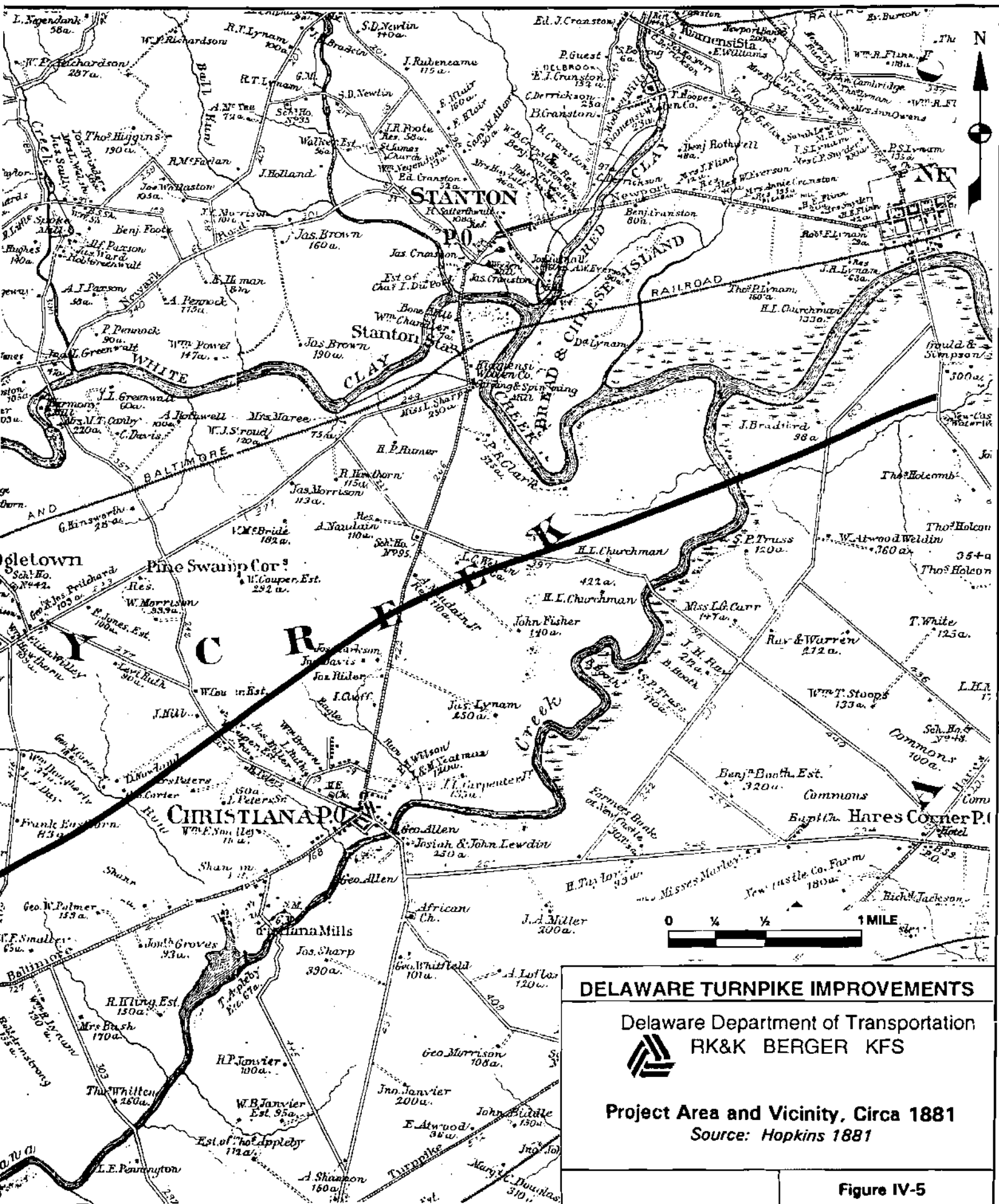
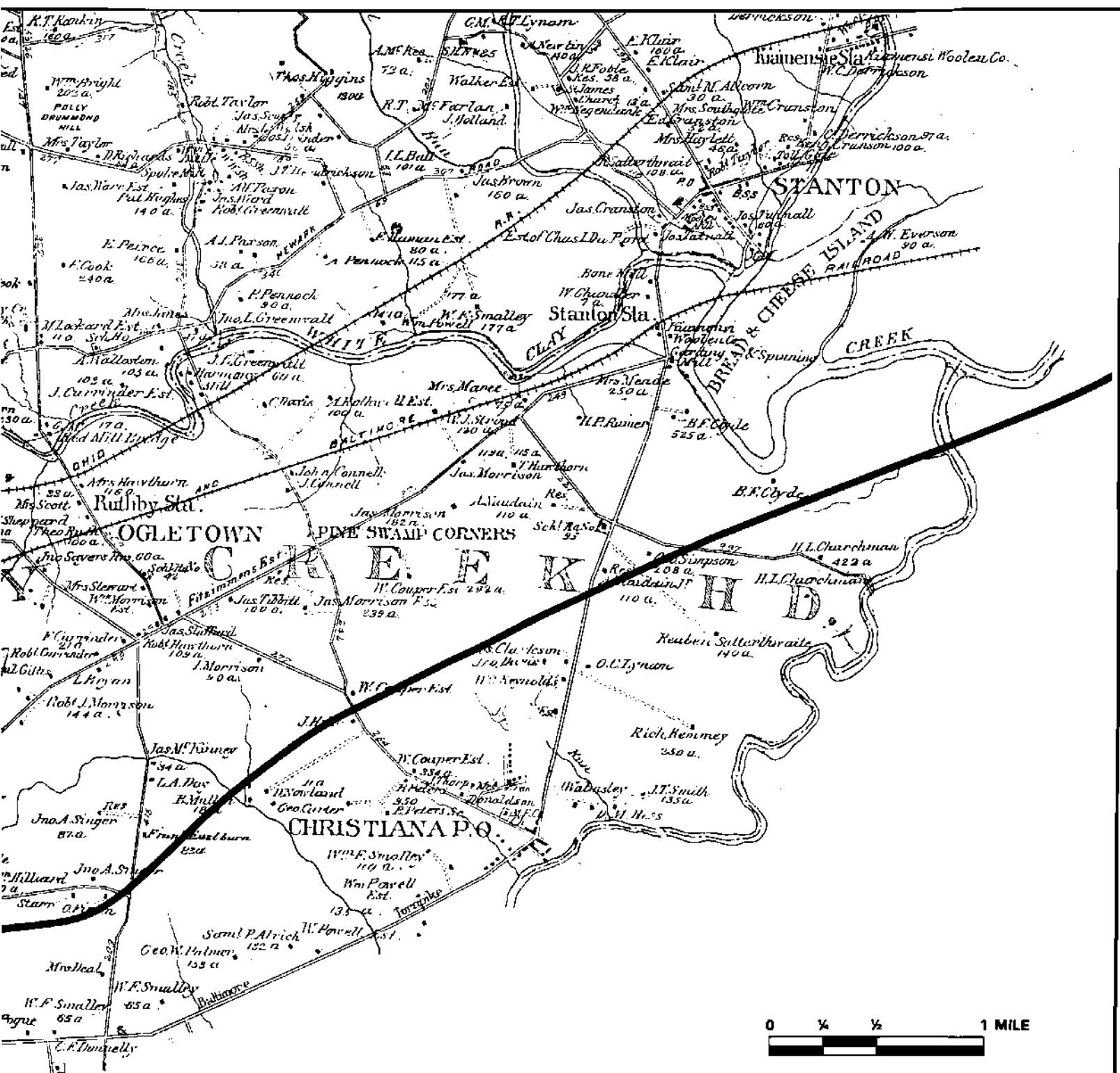


Figure IV-5



LEGEND

 Delaware Turnpike Corridor

DELAWARE TURNPIKE IMPROVEMENTS

Delaware Department of Transportation



RK&K BERGER KFS

Project Area and Vicinity, Circa 1893

Source: Baist 1893; Plate 10

Figure IV-6

D. HISTORIC PROPERTIES IN THE PROJECT AREA

Table IV-2 provides information on the National Register status of the 30 historic properties in the project area. Eight of these resources are either listed on the National Register or appear potentially eligible for listing on the National Register. These resources are discussed below and their locations are depicted on Figure IV-7.

The descriptions of the eight National Register or potentially eligible historic properties are organized under the chronological outline in the Delaware Comprehensive Historic Preservation Plan (Ames et al. 1989) and described in the previous section (Historical Overview). Resources are listed under the period that a building was constructed or modified, or when a relevant historic event occurred.

The field survey of the five potentially eligible historic resources in the project area revealed the existence of several historic themes outlined in the Preservation Plan (Ames et al. 1989). The applicable geographic zone is the Upper Peninsula (Zone 2). For the Lewis Weldin Farmhouse, the 239 Chestnut Hill Road property, and the 191 Chapman Road property, the applicable themes are agriculture and architecture, engineering, and decorative arts, 1830-1880. For the Henry L. Churchman House, the applicable themes are agriculture and architecture, engineering, decorative arts, and major families, individuals, and events, 1830-1880. For the 180 Welsh Tract Road property, the applicable themes are settlement patterns and demographic changes and architecture, engineering, and decorative arts, 1880-1940±.

1630-1730: Exploration and Frontier Settlement

No extant buildings from this settlement period are known to exist in the Delaware Turnpike project area.

1730-1770: Intensified to Durable Occupation

This period is represented by several buildings in the southwest portion of the project area.

Welsh Tract (Old School) Baptist Church and Parsonage (N-264). This National Register-listed property is located along Welsh Tract Road (Figure IV-7). The church building was constructed in 1746 to replace the Welsh Baptist meeting house built in 1706. According to church records, the 1746 church contains timbers from the original 1706 building (Heite and Troy 1973). The 1746 church is a Georgian-style building with Greek Revival alterations. It is a one-and-one-half-story, rectangular building, with Flemish bond brickwork. The clipped-gable roof is covered with asphalt shingles and has a molded cornice with return gable-ends. The north facade is stuccoed and contains a primary central entrance. A "1746" wrought-iron date marker is located in the north facade gable. Surrounding the church is a stucco-over-stone wall enclosing a cemetery, which contains several tombstones dating to the

TABLE IV-2. DELAWARE TURNPIKE HISTORIC RESOURCES

In the course of conducting the survey and analysis of resources within the Delaware Turnpike (I-95) study area, federal regulations and guidelines 36 CFR 60.4, entitled "Criteria for Evaluation," have been followed.

Sheet #	Cultural Resource Survey #	Property Name/ Address	Tax Parcel #/ Hundred Name	Status	Determination/Recommendation
1	N-12867	338 West Chestnut Hill Road Agricultural Complex	11-009.00-009 Pencader Hundred	Cultural Resource Survey (October 1991)	Appears not eligible
1	N-6205	259 Welsh Tract Road Dwelling	11-013.00-002 Pencader Hundred	Cultural Resource Survey June 1980)	Appears not eligible.
1	N-12868	180 Welsh Tract Road Dwelling	18-052.00-003 Newark Hundred	Cultural Resource Survey October 1991)	Appears potentially eligible for listing on the National Register under Criterion C.
1	N-12870	36 Welsh Tract Road Dwelling	11-009.00-059 Pencader Hundred	Cultural Resource Survey (October 1991)	Appears not eligible.
1	N-264	Welsh Tract (Old School) Baptist Church Welsh Tract Road	11-009.00-032 and 11-009.00-042 (Trustees of Welsh Tract Baptist Church) Pencader Hundred	National Register (March 1, 1973)	Verify contributing and noncontributing resources and determine boundaries.
1	N-190	Cooch's Bridge Historic District Old Baltimore Pike/Route 72 Cooch's Bridge Road	11-010.00-009 and 11-014.00-042/043/044/045/073/080 Pencader Hundred	National Register (October 17, 1972; amended September 14, 1990)	No further investigation is recommended.
1	N-12903	1121 Old Cooch's Bridge Road Dwelling	18-046.00- Newark Hundred	Cultural Resource Survey (January 1993)	Appears not eligible
1	N-12871	1202 Old Cooch's Bridge Road Dwelling	18-046.00-027 Newark Hundred	Cultural Resource Survey October 1991)	Appears not eligible.
1	N-12872	239 East Chestnut Hill Road Agricultural Complex	11-006.00-017 Pencader Hundred	Cultural Resource Survey (October 1991)	Appears potentially eligible for listing on the National Register under Criteria A and C.

TABLE IV-2. DELAWARE TURNPIKE HISTORIC RESOURCES

Sheet #	Cultural Resource Survey #	Property Name/ Address	Tax Parcel #/ Hundred Name	Status	Determination/Recommendation
1	N-11175	Pilgrim Tabernacle Church Route 72	11-010.00-040 Pencader Hundred	Cultural Resource Survey (March 1987)	Determined not eligible by Delaware State Historic Preservation Office (Kise Franks & Straw Inc., "Historic Property Evaluation on Old Baltimore Pike Between Routes 7 and 896," March 1987. Unpublished Report).
1	N-11167	Workers House #1 688 Old Baltimore Pike	09-037.00-008 White Clay Creek Hundred	Cultural Resource Survey March 1987)	Determined not eligible by Delaware State Historic Preservation Office (Kise Franks & Straw Inc., "Historic Property Evaluation on Old Baltimore Pike Between Routes 7 and 896," March 1987. Unpublished Report).
1	N-11168	Workers House #2 690 Old Baltimore Pike Demolished 1992	09-037.00-007 White Clay Creek Hundred	Cultural Resource Survey March 1987)	Determined not eligible by Delaware State Historic Preservation Office (Kise Franks & Straw Inc., "Historic Property Evaluation on Old Baltimore Pike Between Routes 7 and 896," March 1987. Unpublished Report).
1	N-11169	Workers House #3 694 Old Baltimore Pike Demolished 1992	09-037.00-006 White Clay Creek Hundred	Cultural Resource Survey March 1987)	Determined not eligible by Delaware State Historic Preservation Office (Kise Franks & Straw Inc., "Historic Property Evaluation on Old Baltimore Pike Between Routes 7 and 896," March 1987. Unpublished Report).
2	N-11166	431 Old Baltimore Pike Demolished 1992	09-037.00-027 White Clay Creek Hundred	Cultural Resource Survey March 1987)	Determined not eligible by Delaware State Historic Preservation Office (Kise Franks & Straw Inc., "Historic Property Evaluation on Old Baltimore Pike Between Routes 7 and 896," March 1987. Unpublished Report).

TABLE IV-2. DELAWARE TURNPIKE HISTORIC RESOURCES

Sheet #	Cultural Resource Survey #	Property Name/ Address	Tax Parcel #/ Hundred Name	Status	Determination/Recommendation
2	N-12873	391 Salem Church Road Dwelling	09-037.00-035 White Clay Creek Hundred	Cultural Resource Survey (October 1991)	Appears not eligible.
2	N-6775	191 Chapman Road Agricultural Complex	09-029.00-009 White Clay Creek Hundred	Cultural Resource Survey (September 1982)	Appears potentially eligible for listing on the National Register under Criteria A and C.
2	N-6777	227 Chapman Road Dwelling	09-029.00-012 White Clay Creek Hundred	Cultural Resource Survey (September 1982)	Appears not eligible.
2	N-1601	Thomas Montgomery House, "Newery," 101 W. Main Street (Route 273 and Eagle Run Road)	09-029.00-026 White Clay Creek Hundred	Investigation Card (February 1974) Cultural Resource Survey Locus Identification Form (May 1978) Individual National Register Nomination (not submitted) White Clay Creek Hundred Multiple Resource Area National Register Nomination (N-6762) (May 1982)	Included as part of White Clay Creek Hundred Multiple Resource Area National Register Nomination. A determination of eligibility has been assessed, however, the property is not listed on the National Register due to the owner's objection.
3	N-11711	Jno. Davis Agricultural Complex 145 Stanton-Christiana Rd.	09-030.00-031 White Clay Creek Hundred	Cultural Resource Survey (August 1987)	Appears not eligible.
3	N-6783	Lewis Weldin Farmhouse (Maple Springs Farm) 857 Churchmans Road	09-018.00-063 White Clay Creek Hundred	Cultural Resource Survey (September 1982) Determination of Eligibility August 1992)	Appears potentially eligible for listing on the National Register under Criterion C.

TABLE IV-2. DELAWARE TURNPIKE HISTORIC RESOURCES

Sheet #	Cultural Resource Survey #	Property Name/ Address	Tax Parcel #/ Hundred Name	Status	Determination/Recommendation
3	N-1603	Henry L. Churchman House (a.k.a. Barber House) 648 Churchmans Road	09-019.00-014 White Clay Creek Hundred	Cultural Resource Survey (January 1979)	Appears potentially eligible for listing on the National Register under Criteria B and C.
3	N-12904	Dwelling on Artesian Property	09-019.00-16 White Clay Creek Hundred	Cultural Resource Survey (January 1979)	Appears not eligible
3	N-12874	315 Airport Road Dwelling	10-013.30-004 New Castle Hundred	Cultural Resource Survey (September 1992)	Appears not eligible.
3	N-12905	317 Airport Road Dwelling	10-013.30-005 New Castle Hundred	Cultural Resource Survey (January 1993)	Appears not eligible.
3	N-12906	319 Airport Road Dwelling	10-013.30-006 New Castle Hundred	Cultural Resource Survey (January 1993)	Appears not eligible.
3	N-12875	321 Airport Road Dwelling	10-013.30-007 New Castle Hundred	Cultural Resource Survey (September 1992)	Appears not eligible.
3	N-12876	323 Airport Road Dwelling	10-013.30-008 New Castle Hundred	Cultural Resource Survey (September 1992)	Appears not eligible.
3	N-12877	331 Airport Road Dwelling	10-013.30-010 New Castle Hundred	Cultural Resource Survey (September 1992)	Appears not eligible.
3	N-12878	332 Airport Road Dwelling	10-015.10-003 New Castle Hundred	Cultural Resource Survey (September 1992)	Appears not eligible.
4	N-12907	491 Old Airport Road Dwelling	10-008.00-004 New Castle Hundred	Cultural Resource Survey (January 1993)	Appears not eligible.

N-12867

CHESTNUT HILL RO

NEWA

Summit View

I-95

Toll Plaza

N-12868

180 Welsh Tract Road

Iron Hill Park

N-3734 (D15)

WHITTAKER ROAD

N-6205

HESTNUT HILL ROAD

NEWARK

COLLEGE AVENUE SOUTH

896

Catalina Gardens

N-12870

N-12903

N-12871

N-264
Welsh
Tract
Baptist
Church

N-264
Welsh
Tract
Baptist
Church

Iron Hill Park



Robscott Manor

Blue Hen
Industrial Park



N-12872
239 Chestnut Hill Road

Diamond State
Industrial Park

BELLEVUE ROAD

CHAPEL STREET

72

OAKF

N-190
Cooch's Bridge
Historic District



N-3741 (D40)

72

Newark Inc

N-11717 (D13)

N-1117

72

Scottfield

OAKFIELD DRIVE

DAWSON DRIVE

Delaware Industrial Park

BROOKHILL DRIVE

South Chapel Industrial Park

72

Newark Industrial Park

N-11717 (D139)

N-11175

Legend

-  N-000 Listed on the National Register of Historic Places
-  N-000 Appears Potentially Eligible for the National Register
-  N-000 Appears Not Eligible for the National Register
-  ▲ N-000 Prehistoric Archaeological Site
-  ■ N-000 Historic Archaeological Site

Note:
N-000 denotes Delaware Cultural Resource Survey (CRS) number

W. I

N-1

N-1

N-1

N-1172

OLD BA

Breezewood II

MATCH LINE

I-95

ALBE DRIVE

Old Baltimore Pike Industrial Park

W. Brooks House

■ N-3991

N-11168

N-11167

N-11169

▲ N-11719 (D142)

■ N-11720 (D143)

OLD BALTIMORE PIKE

--- Existing Right of Way
--- State-owned Out Parcels
--- Incorporated Areas

--- Proposed Right of Way
--- Improvement Concepts

DELAWARE TURNPIKE IMPROVEMENTS

Toll Plaza to Old Baltimore Pike Industrial Park



Delaware Department of Transportation

RK&K • BERGER • KFS



0 250 500 1000 Feet

Sheet 1

Cultural Resources

Figure IV-7

MATCH LINE

I-95

**Old
Baltimore Pike
Industrial
Park**

ICI Americas



N-11714 (D136)



N-11715

N-12873

N-11166



N-3740 (D52)



Little Sisters
Of The Poor

SALEM CHURCH ROAD

Christi

Marydale Retirement
Community

GENDER ROAD

Utility ROW

Christiana
Corporate Center

Christiana School District &
Operations Maintenance

Christiana Industrial Park



N-11715 (D137)

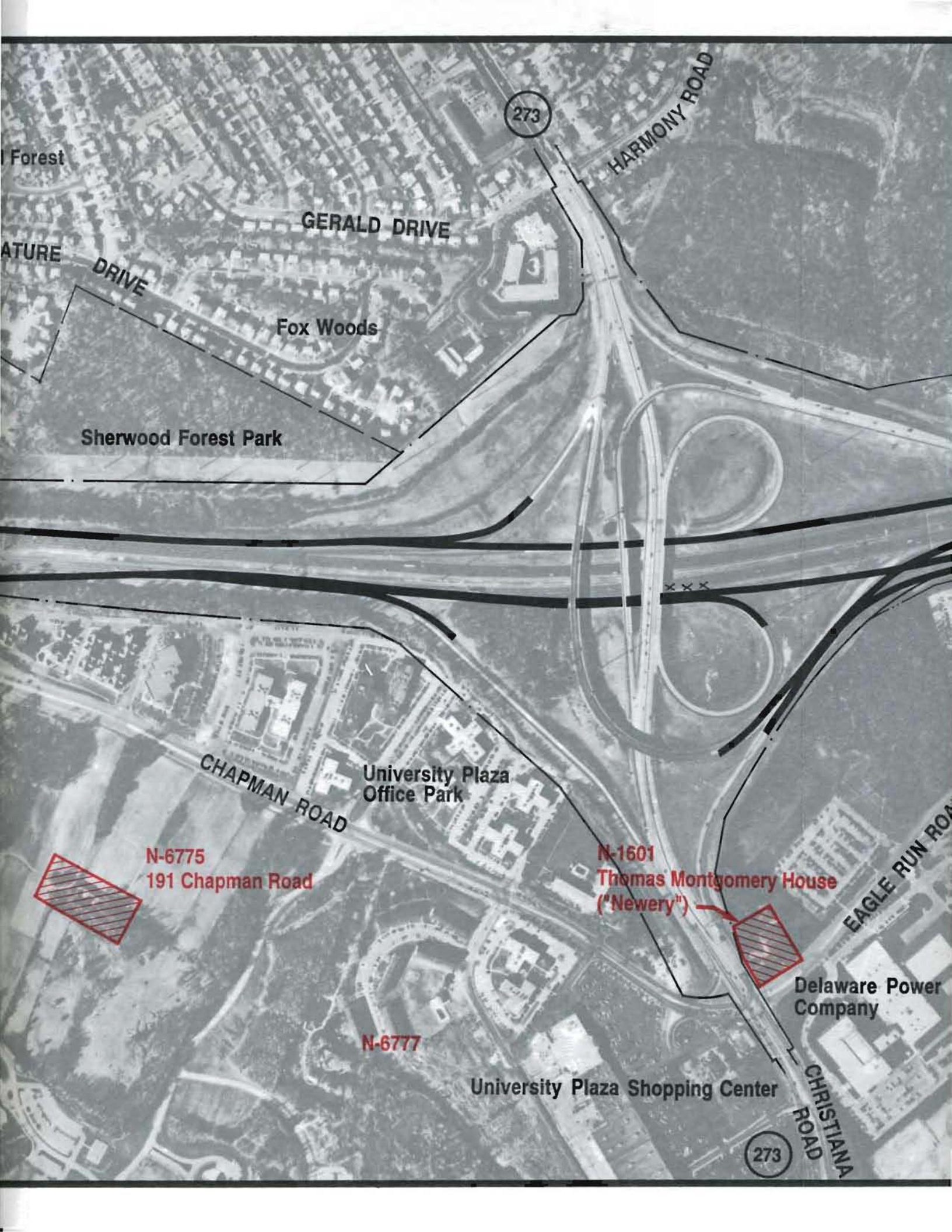
N-12873



Legend

-  N-000 Listed on the National Register of Historic Places
-  N-000 Appears Potentially Eligible for the National Register
-  N-000 Appears Not Eligible for the National Register
-  N-000 Prehistoric Archaeological Site
-  N-000 Historic Archaeological Site

Note:
N-000 denotes Delaware Cultural Resource Survey (CRS) number



273

HARMONY ROAD

GERALD DRIVE

Fox Woods

Sherwood Forest Park

CHAPMAN ROAD

University Plaza Office Park

EAGLE RUN ROAD

N-6775
191 Chapman Road

N-1601
Thomas Montgomery House
("Newery")

Delaware Power Company

N-6777

University Plaza Shopping Center

CHRISTIANA ROAD

273



▲ N-3718 (D22)

Christ

MATCH LINE

I-95

DuPont Eagle Run Plant

N-11711

CHRISTIA

N-6264 (E46)



58

CHURCHMANS ROAD

7

Christiana Executive Campus

CONTINENTAL DRIVE

CHRISTIANA STANTON ROAD

GEOFFERY DRIVE

Delaware

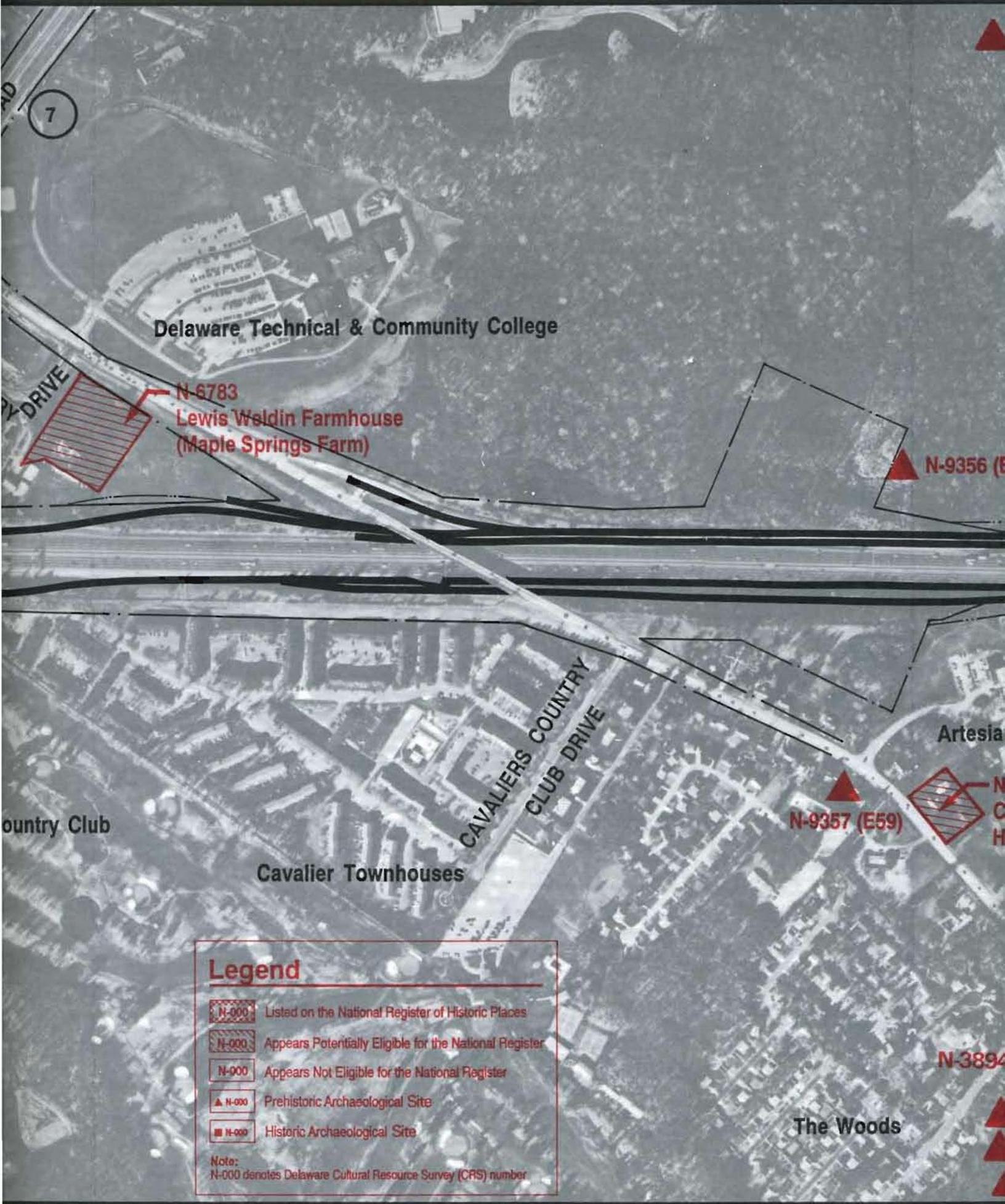
N-678
Lewis
(Map)

Cavaliers Country Club

Christiana Mall

CHRISTIANA STANTON ROAD

7



Legend

- N-000 Listed on the National Register of Historic Places
- N-000 Appears Potentially Eligible for the National Register
- N-000 Appears Not Eligible for the National Register
- ▲ N-000 Prehistoric Archaeological Site
- N-000 Historic Archaeological Site

Note:
N-000 denotes Delaware Cultural Resource Survey (CRS) number

▲ N-3723 (E6)
Clyde Farm

CHURCHMANS MARSH

▲ N-9356 (E58)

Artesian Water Company

▲ N-1603
Churchman
House

County Commerce

N-12904

▲ N-357 (E59)

N-10305

CHRISTINA

▲ N-3894 (E35)

▲ N-3895 (E36)

▲ N-3896 (E37)

▲ N-3897 (E38)

58

x x x x Ramp to be Eliminated

N-10299 (E76)

Christ

Woods

MARSH

CLAY CREEK

CHRISTINA RIVER

MATCH LINE

I-95

AIRPORT DRIVE

N-12874
N-12905
N-12906
N-12875
N-12876
N-12877
N-12878

N-10305 (E79)

RIVER

CHRISTINA

N-9597
(E71)

N-10299 (E76)

Christiana Acres

NOTE: Proposed right-of-way shown through Churchmans Marsh is 2:1 slope option.

- | | | | |
|-------|-------------------------|-------|-----------------------|
| ----- | Existing Right of Way | ----- | Proposed Right of Way |
| ----- | State-owned Out Parcels | ----- | Improvement Concepts |

DELAWARE TURNPIKE IMPROVEMENTS

DuPont Eagle Run Plant to Airport Road
Delaware Department of Transportation
RK&K • BERGER • KFS



Sheet 3

Cultural Resources

Figure IV-7

be Eliminated

Red Clay Conso
District Transpor

N-1290

N-3

OLD AIRPORT ROAD

MATCH LINE

AIRPORT ROAD

AIRPORT ROAD

NONESUCH

CREEK

Power Substation

BASIN ROAD

Red Clay Consolidated School
District Transportation Office

41

NEWPORT MARSH

141

N-12907

▲ N-3719 (E1)

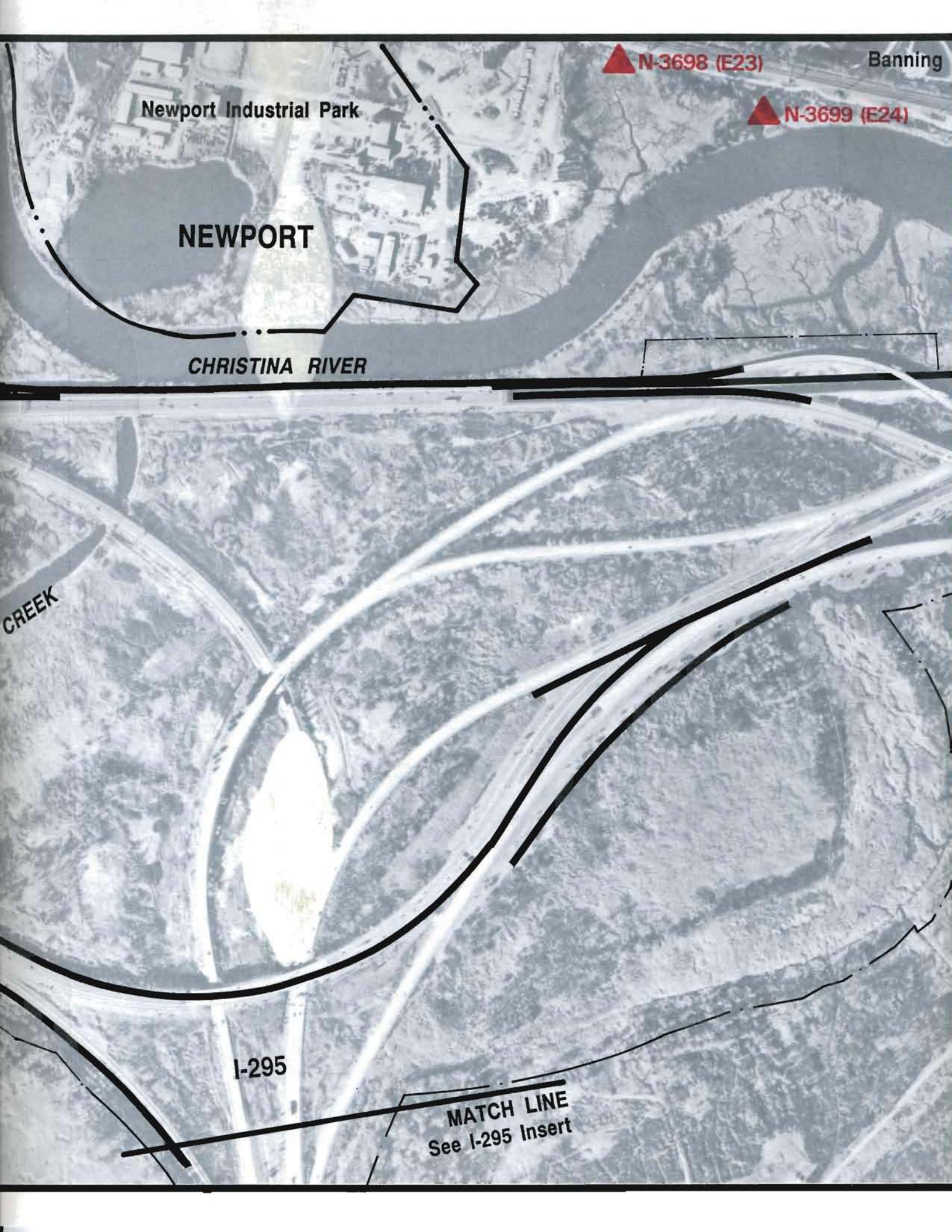
NONESUCH CREEK

Power Substation

BASIN ROAD

141

Basin Road
Industrial Park



Newport Industrial Park

NEWPORT

CHRISTINA RIVER

▲ N-3698 (E23)

Banning

▲ N-3699 (E24)

CREEK

I-295

MATCH LINE
See I-295 Insert

(E23)

Banning Park

▲ N-3699 (E24)

Conrail

I-95

I-495

Conrail

Legend



Listed on the National Register of Historic Places



Appears Potentially Eligible for the National Register



Appears Not Eligible for the National Register



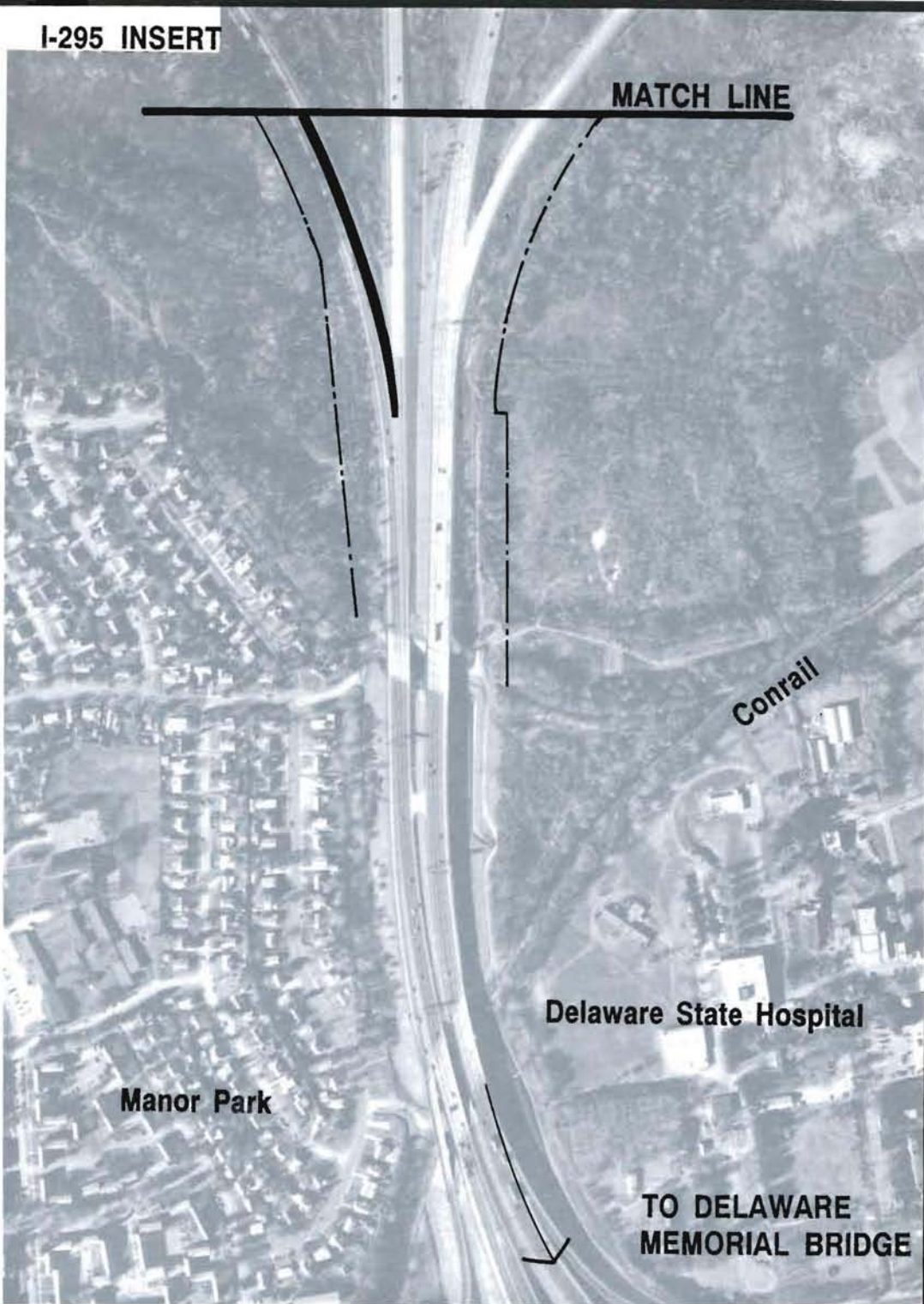
Prehistoric Archaeological Site



Historic Archaeological Site

Note:

N-900 denotes Delaware Cultural Resource Survey (CRS) number



DELAWARE TURNPIKE IMPROVEMENTS

Airport Road to Little Mill Creek
Delaware Department of Transportation
RK&K • BERGER • KFS

0 250 500 1000 Feet

Cultural Resources

Figure IV-7

Sheet 4

first half of the eighteenth century. A stand of mature oak trees is located outside the stone wall along Welsh Tract Road.

In 1701, a small group of Baptists from Wales set sail for America on a journey that would lead to the establishment of the first Baptist Church in Delaware. After a brief stay in Philadelphia, the Welsh purchased 30,000 acres of land from William Penn in northwestern New Castle County, at the foot of Iron Hill. Over the next few years, the settlers built a log meeting house for worship. Their congregation steadily increased with members from Wales, as well as converts from the surrounding area. Despite the religious focus of their settlement, these early Welsh Baptists also built mills and iron forges in the ore-rich Iron Hill.

The Welsh Tract Baptist Church became the mother church from which congregations eventually separated to form other churches. As early as 1736, a group of Welsh Baptists moved on to South Carolina, where they founded a church in an area that became known as Welsh Neck (Scharf 1888:954). The Welsh Tract Church also became the mother of the London Tract Church congregation in Pennsylvania, and the Duck Creek Church congregation in Delaware. Essentially, all of the early Baptist churches in Delaware evolved from the Welsh Tract Church (MacDonald 1963:25).

The Welsh Tract Baptist Church Parsonage is located to the west of the church and is listed as a contributing resource in the Welsh Tract (Old School) Baptist Church National Register Nomination, dated March 1, 1973. The parsonage is a two-and-one-half-story, stucco-over-stone vernacular dwelling, which appears to have been constructed circa 1860. The side-gabled roof is covered with standing seam metal, and contains a gabled dormer on the north roof slope. Window openings are rectangular, with two-over-two, double-hung wood sash. A later frame addition is located on the north facade. The property is approached by a long drive and is surrounded by mature deciduous and evergreen trees.

Boundaries for the Welsh Tract property need to be confirmed, and contributing and non-contributing resources verified.

Cooch's Bridge Historic District (N-190). All of the mid-eighteenth-century resources in the Cooch's Bridge Historic District are located just outside of the project area (see Figure IV-7, Sheet 1). The portion of the historic district that is included in the project area, however, represents the original lands purchased by Thomas Cooch in 1746. Cooch's Bridge Historic District was listed on the National Register October 17, 1972, and the nomination was amended September 14, 1990.

Thomas Montgomery House "Newery" (N-1601). Further east in the project area, on State Route 273 near Christiana, is the Newery property (see Figure IV-7, Sheet 2). This farmhouse was built on land purchased by Thomas Montgomery, an English merchant and land speculator in northern Delaware during the mid-eighteenth century. According to local records, the property exchanged owners several times over the first half of the nineteenth century, until it

was purchased by a W. Couper. The 1868 Pomeroy and Beers atlas lists the property as "Newery" belonging to W. Couper.

The house is a two-and-one-half-story, four-bay, Georgian-style dwelling, constructed circa 1750. The brick building is constructed in English bond, and a brick stringcourse is located between the first and second stories. The side-gabled roof is covered with asphalt shingles and contains a boxed cornice and gable-end, interior brick chimneys on the north and south facades. Window openings are rectangular, with six-over-six, double-hung wood sash. Two-story additions, connected by a hyphen, are located on the north (rear) facade. A stone bank-barn is located west of the house. The side-gabled roof is covered with asphalt shingles, and has exposed rafters at the eaves. A cupola is centrally located at the roof ridge. The Thomas Montgomery House is included in the White Clay Creek Hundred Multiple Resource Area National Register Nomination (N-6762), dated May 1982. Although the property has been determined eligible for the National Register, it has not been listed because of the owner's objection.

1770-1830: Early Industrialization

Cooch's Bridge Historic District (N-190). The only Cooch's Bridge historic resources in the project area that date to this time period are a late eighteenth-century dam and mill race. Historic events contributing to the significance of the property also occurred during this period in the historic district. Most notable is the site of the only American Revolutionary War battle that took place on Delaware soil. Cooch's Bridge was the site of the American Army's holding action against British troops in 1777. As a result of this battle, the bridge and early eighteenth-century Cooch Mill were burned by the British. Cooch's Bridge Historic District was listed on the National Register October 17, 1972; the nomination was amended September 14, 1990.

1830-1880: Industrialization and Early Urbanization

This period of time saw the greatest amount of development in the project area and the surrounding area of northern New Castle County.

The Welsh Tract Baptist Church Caretaker's House (N-264). A stone dwelling referred to as the Caretaker's House is located opposite the Welsh Tract Baptist Church and Parsonage on Welsh Tract Road (Heite and Troy 1973). The dwelling is not identified on the 1868 Pomeroy and Beers atlas of New Castle County, but appears on the 1881 Hopkins atlas of New Castle County (see Figures IV-5 and IV-6). The stucco-over-stone dwelling is a one-and-one-half-story, three-bay, vernacular dwelling. The side-gabled roof is covered with asphalt shingles, and contains a gabled dormer window on the east roof slope. Located on the cottage property are a post and frame carriage shed noted in the nomination, and a stucco-over-stone ice house or spring house, with a wood shingle gabled roof, not noted in the nomination. The caretaker's house is listed as a contributing resource in the Welsh Tract (Old School) Baptist Church National Register nomination, dated March 1, 1973. Boundaries for the Welsh Tract property

need to be confirmed, and contributing and non-contributing resources verified (see Figure IV-7, Sheet 1).

Lewis Weldin Farmhouse, Maple Springs Farm (N-6783). The Lewis Weldin Farmhouse is an L-shaped, two-and-one-half-story, three-bay, brick, vernacular Italianate dwelling, constructed circa 1868 (see Figure IV-7, Sheet 3). The intersecting gable roof is covered with standing seam metal, and contains a flat rectangular area at the ridgeline of the west facade. A full one-story screened porch, containing a central entrance, is located on the west facade. Window openings are rectangular, with four-over-four, double-hung wood sash. The windows are fitted with three-panel wood shutters at the first story, and wood louvers at the second story. There are two interior brick chimneys with simple brick caps. One of the chimneys is located at the east end of the north facade roof ridge, and the other is located in the valley between the west and south gables. A circa 1910 frame, vernacular addition, consisting of two sections, is attached to the east gable end of the brick building. The first section is a two-and-one-half-story, two-bay building. The side-gabled roof is finished with asphalt shingles. The second section is a one-story addition erected on the north and east facades of the two-and-one-half-story building. The addition has a flat roof covered with asphalt paper. The two circa-1910 sections are clad with asbestos shingles. Windows throughout the addition are two-over-two, double-hung wood sash. The property also contains several modern outbuildings south of the farmhouse, which include a chicken coop, three pole barns, a granary shed, silo and machine shed. This property has been represented in the Delaware State Historic Preservation Office files, and a Determination of Eligibility report has been prepared (see Appendix A). The property appears potentially eligible for the National Register under Criterion C, due to its high architectural integrity.

239 Chestnut Hill Road Agricultural Complex (N-12872). This agricultural complex (see Figure IV-7, Sheet 1) is identified on the 1849 Rea and Price and 1868 Pomeroy and Beers atlases of New Castle County as belonging to the Armstrong family. On both the 1881 Hopkins and 1893 Baist atlases, the property is listed as containing 150 acres belonging to an M.P. Brooks. The stucco-over-stone dwelling stands two-and-one-half-stories with four bays. The side-gabled roof is covered with standing seam metal and contains a boxed cornice, and three interior chimneys. The main block of the house is deteriorated from long-term lack of maintenance. However, it appears that the majority of the character-defining features are intact. A frame barn, with an attached shed, and a frame granary are located west of the dwelling. The 239 Chestnut Hill Road property appears potentially eligible for the National Register under Criterion A, due to its association with agricultural events in New Castle County, and Criterion C, due to its high architectural integrity.

191 Chapman Road Agricultural Complex (N-6775). This agricultural complex (see Figure IV-7, Sheet 2) is listed on the 1849 Rea and Price Atlas of New Castle County as belonging to an H. White. Later atlases (Baist 1838; Hopkins 1881; Pomeroy and Beers 1868) indicate the property belonged to the Peters family. The 1868 atlas lists a B. & J. Peters as "Dealers in General Merchandise." Mr. H. White, and subsequently the Peters family, also owned a nearby property which is present-day 227 Chapman Road (N-6777). It appears that this property was

historically a tenant farm under the White and Peters' ownership, based on the simple vernacular details and frame construction of this resource in comparison to the brick masonry construction of N-6777. The building represents a rare example of a once common building type—vernacular frame construction—and retains a high level of integrity. Long-term lack of maintenance has severely compromised the structural integrity of the building. The outbuildings are in an advanced state of deterioration. The agricultural complex appears potentially eligible for the National Register under Criterion A, due to its association with agricultural events in New Castle County, and Criterion C, for its high architectural integrity as a representative example of tenant farm vernacular style.

Henry L. Churchman House (a.k.a. Jarber House) (N-1603). The Churchman House (see Figure IV-7, Sheet 3) is identified as the Jarber House in a January 1974 Investigation Card filed at the Delaware State Historic Preservation Office. The property was named after the current owner at the time of the survey. (The owner's name was actually spelled Garber.) According to the Investigation Card, the house was built circa 1856 by Henry L. Churchman. During this time, Mr. Churchman owned a large tract of land known as "Muscle Cripple" near present-day Churchmans Marsh. This tract originally comprised 800 acres at the time Governor Nichols granted it to John Ogle, et. al., in 1672. During the mid-nineteenth century, Henry L. Churchman purchased the property. At this time the property contained 1,060 acres, and extended from White Clay Creek to Christina Creek, with present-day Route 273 dividing the property. The Pomeroy and Beers 1868 Atlas of New Castle County identifies the house in the "Muscle Cripple" tract as belonging to Henry L. Churchman. During this time, the dwelling had access by way of an unpaved road to present-day Christiana Road, which led to Christiana Village. By 1881, the Hopkins Atlas identified present-day Churchmans Road connecting present-day Christiana Road to Hares Corner, near New Castle.

The Churchman House is a two-and-one-half-story, five-bay, stuccoed dwelling. The side-gabled roof is covered with asphalt shingles, and contains four interior stuccoed chimneys, one on each roof slope on the gable end. The chimneys have been stuccoed together to appear as double stacks. Three front-gabled dormers are located on the north and south roof slopes. To the west is a three-car garage addition, while on the east there is a one-story partially endorsed side porch. This dwelling appears potentially eligible for the National Register under Criterion B, due to its association with Henry L. Churchman, a businessman and land speculator during the second half of the nineteenth century, and under Criterion C, due to its high architectural integrity.

1880-1940: Urbanization and Early Suburbanization

180 Welsh Tract Road (N-12868). The only potentially eligible National Register property in the project area, representative of the early twentieth-century period of urbanization and suburbanization, is a circa 1915 Craftsman-style dwelling, located at 180 Welsh Tract Road (see Figure IV-7, Sheet 1). The house is a two-and-one-half-story frame dwelling. The exterior is covered with wood shingles, and has a split side-gabled roof. Window openings are rectangular, with three-over-one, double-hung wood sash, and eight-light casements. A frame garage, built

in the Craftsman style, is located north of the house. The 180 Welsh Tract Road property appears potentially eligible for the National Register under Criterion C, as a high-style representative example of Craftsman design with the majority of its character-defining features unaltered.

E. ARCHAEOLOGICAL RESOURCES IN THE PROJECT VICINITY

1. Previous Archaeological Investigations

Compared to other sections of the state, northern New Castle County has been relatively well-studied from the perspective of archaeological investigations. Much of this research has been conducted for the Delaware Department of Transportation by the University of Delaware, Center for Archaeological Research.

The original archaeological survey for the Delaware Turnpike right-of-way was conducted in 1958 by Jacob Gruber (1962). At that time, the route comprised a 300-foot-wide corridor with four interchanges, each averaging about 50 to 70 acres in area. Fieldwork was limited to areas west of Churchmans Marsh because previous episodes of construction and other earthmoving activities were thought to have disturbed any potential archaeological remains east of the marsh. Limited excavations were conducted in selected areas near Churchmans Marsh because of the existence of the nearby Clyde Farm site (N-3723/7NC-E-6). Where possible, surface survey was conducted in plowed fields. Gruber also conducted interviews with local landowners regarding private artifact collections from the region.

The results of Gruber's survey were generally negative; no archaeological sites were recorded within the project area. However, Gruber recognized the limitations of his selective survey methods and recommended the use of systematic test excavations as an alternative. He suggested that the areas surrounding both the Iron Hill interchange and Churchmans Marsh had a high potential for "significant occupation" that might be identified through further study (Gruber 1962:3).

Since Gruber's pioneering efforts, the archaeological investigation of the northern Delaware region has improved in its theoretical orientation and field methods. Pertinent to this investigation are two Phase I studies conducted in road alignments parallel to the Turnpike (Catts et al. 1989b; Thomas 1980) and three studies that were completed along transects running perpendicular to the Turnpike (Catts et al. 1988; Custer and Bachman 1986; Lothrop et al. 1986). In addition, the vicinities of both Ogletown and Christiana have been extensively studied, and both the Iron Hill and Churchmans Marsh areas have been subject to analysis (Custer 1982; Custer and Galasso 1980; Custer, Ward, and Watson 1986; Custer, Watson, and DeSantis 1986).

During the early 1980s, Phase I and II investigations were conducted in preparation for the dualization of New Churchmans Road, located immediately north and east of the Route 7 and Delaware Turnpike interchange (O'Connor et al. 1983). This study identified the remains of the

William M. Hawthorn farmstead (N-6264/7NC-E-46), which was continuously occupied from the mid-eighteenth century through the twentieth century. A Woodland period occupation was also identified on this 3.5-acre property. Determined eligible for the National Register of Historic Places, both the prehistoric and historic components of the W. M. Hawthorn site were subject to data recovery excavations (Coleman et al. 1984; Custer and Bachman 1984). The Woodland component was dated circa 1000 - 750 B.C. and interpreted as a camp site where nut and seed processing, butchering, and tool refurbishing occurred. Data recovery from the historic component provided evidence of the agricultural transitions from grain farming to specialty crops to dairying. Interestingly, the archaeological record at this site contained little evidence of the apparent wealth of its occupants as documented from written sources.

In 1985, an intensive study of the Wilson Slack agricultural works complex was completed (Bachman et al. 1984; Coleman et al. 1985). This site is located along State Route 4, north and east of the State Route 896/Delaware Turnpike interchange. The complex functioned as a small blacksmithing and wheelwrighting business during the second half of the nineteenth century. Archaeological investigations were combined with documentary and architectural research to generate a description of the facility through time. Potentially significant archaeological deposits were not identified during these studies.

Portions of State Route 896 immediately north and south of the Turnpike were investigated during 1987 (Lothrop et al. 1987). Testing along Route 896 north of the Turnpike yielded only disturbed soil contexts and modern cultural material. No evidence of the J. H. Clendenin farm, depicted on the Pomeroy and Beers 1868 atlas, was located within the project area. A prehistoric site identified south of the Turnpike (7NC-D-108) was interpreted as the remains of a primary lithic reduction site related to outcrops from Iron Hill (Lothrop et al. 1987:182-187).

Located north of the Turnpike, the Ogletown area was subject to extensive archaeological investigations during the late 1980s (Coleman et al. 1987, 1990; Custer et al. 1988; Hoseth et al. 1990). The Phase I study of the proposed Ogletown interchange identified five prehistoric sites and seven historic sites. The prehistoric resources dated from the Archaic through Woodland II periods and were associated with poorly drained interior swamps and springhead areas. Further investigations at the Dairy Queen Site (7NC-D-129) indicated that this Woodland I component functioned as a hunting and resource processing camp, where limited stone tool refurbishing was accomplished (Custer et al. 1988). Because of its small size, limited functions, and disturbed contexts, this site was not considered eligible for inclusion on the National Register.

The historic resources in the Ogletown interchange area were mostly nineteenth-century farmsteads. Excavations at the John Ruth Inn site (N-10892/7NC-D-126) documented the existence of an 18x15-foot cellar infilled during the 1780s. The cellar remains and other late eighteenth-century features were found beneath extensive historic filling, grading, and paving. Because of its unclear historical association and its partially disturbed archaeological context, this site was not considered eligible for inclusion on the National Register. The A. Temple Site (N-9594/7NC-D-68) was interpreted as the remains of a tenant farmer's residence that was

occupied from the mid-nineteenth through mid-twentieth centuries. Excavations at this site (Hoseth et al. 1990) included a stratified sample of plowzone soils, subsequent mechanical removal of the plowzone, and identification of over 80 subsurface features. Analysis of the ceramic assemblages from the site indicated that material remains at nineteenth-century farmsteads do not always provide a clear indication of the social status of residents.

Excavations along the Route 7 corridor south of the Turnpike located seven prehistoric sites and six historic sites (Catts et al. 1988). Dating from the Archaic through Woodland II periods, the prehistoric sites included a large base camp, the Lewden Greene site (7NC-E-9). Phase II investigations at this site recovered numerous artifacts from plow-disturbed contexts but no subsurface features were identified (Custer et al. 1990). Lewden Greene dated primarily to the Woodland II period and was not considered eligible for inclusion on the National Register. Historic sites identified in the Route 7 survey included the Patterson Lane site complex, which was subject to intensive excavations (Catts et al. 1989a). Patterson Lane's three historic sites (7NC-E-53, 7NC-E-82, and 7NC-E-83) included a residence, a store, and a tenant house. Phase II testing at the Upland Victorian Site (7NC-E-54), a mid-nineteenth-century to twentieth-century house site, also produced remains of Woodland I and II occupations. Based on the size of the site, the presence of prehistoric ceramics and varied lithic tool types, and the evidence of biface production, the site was interpreted as a micro-band base camp. This was somewhat contrary to expectations, given the site's interior location near a minor tributary stream (Catts et al. 1989a:180, 188, 197).

Investigations along portions of the Old Baltimore Pike, located south of the Delaware Turnpike, located five prehistoric sites using models for site location developed from previous investigations in the region (Catts et al. 1989b). One of these, the Stuart Forest Site (N-11715/7NC-D-137), included Archaic and Woodland I components. This prehistoric campsite was considered potentially eligible for listing in the National Register.

2. Archaeological Sites and Site Potential in the Project Area

Table IV-3 lists all previously recorded archaeological sites within one mile of the Turnpike. Among the 82 known sites are 57 prehistoric sites, 13 historic archaeological sites, 8 sites which contained both prehistoric and historic components, and 4 sites with no cultural attribution. The latter four sites are probably prehistoric, given their locations and the dates they were recorded. Twenty-three sites are located in proximity to the proposed project. These sites are highlighted in Table IV-3, and their locations are shown on Figure IV-7.

In addition to these known sites, areas within the proposed project right-of-way have the potential to contain unidentified archaeological deposits. The potential for an area to yield archaeological deposits is determined by site locational preferences, archaeological formation processes, and the extent of modern disturbances, such as previous construction activities.

TABLE IV-3

ARCHAEOLOGICAL RESOURCES WITHIN ONE MILE OF THE TURNPIKE

State CRS #	BAHP Site #	Period	Cultural Affiliation, Site Type, and Comments
N-3697	7NC-E-19	Prehistoric	Nondiagnostic
N-3698	7NC-E-23	Prehistoric	Scatter
N-3699	7NC-E-24	Prehistoric	Archaic
N-3716	7NC-D-30	Undetermined	Probably prehistoric
N-3717	7NC-D-45	Undetermined	Probably prehistoric
N-3718	7NC-D-22	Prehistoric	Scatter
N-3719	7NC-E-1	Prehistoric	Archaic, Woodland I and II scatter
N-3720	7NC-E-26	Prehistoric	Scatter
N-3721	7NC-E-4	Prehistoric	Archaic, Woodland I and II scatter
N-3722	7NC-E-21	Prehistoric	Paleoindian and Woodland I scatter
N-3723	7NC-E-6	Prehistoric	Archaic, Woodland I and II base camp
N-3726	7NC-E-16	Prehistoric	Archaic and Woodland I scatter
N-3727	7NC-E-31	Prehistoric	Woodland I scatter
N-3728	7NC-D-6	Prehistoric	Archaic and Woodland I
N-3729	7NC-D-19	Prehistoric	Woodland I and II
N-3730	7NC-D-3	Prehistoric	Archaic, Woodland I and II
N-3733	7NC-D-43	Prehistoric	Nondiagnostic
N-3734	7NC-D-15	Prehistoric	Paleoindian
N-3735	7NC-D-41	Undetermined	Probably prehistoric
N-3736	7NC-D-34	Prehistoric	Paleoindian and Woodland I campsite
N-3737	7NC-D-5	Prehistoric	Archaic and Woodland I
N-3738	7NC-D-53	Prehistoric	Woodland I
N-3740	7NC-D-52	Prehistoric	Woodland I and II
N-3741	7NC-D-40	Prehistoric	Nondiagnostic
N-3742	7NC-D-1	Prehistoric	Archaic and Woodland I
N-3743	7NC-D-39	Undetermined	Probably prehistoric
N-3755	7NC-D-21	Prehistoric	Woodland I
N-3894	7NC-E-35	Prehistoric	Woodland I Webb Complex

TABLE IV-3 Continued

State CRS #	BAHP Site #	Period	Cultural Affiliation, Site Type, and Comments
N-3895	7NC-E-36	Prehistoric	Lithics; Woodland I Webb Complex
N-3896	7NC-E-37	Prehistoric	Woodland I (Webb Complex) and II
N-3897	7NC-E-38	Prehistoric	Archaic, Woodland I and II
N-3902	7NC-D-93	Historic	19th/20th-century homestead
N-5284	7NC-E-43	Prehistoric/Historic	Woodland I; 19th-century farm
N-5303	7NC-D-63	Prehistoric/Historic	Archaic activity locus; historic scatter
N-5300	7NC-E-42	Prehistoric	Middle Archaic and Woodland II scatter
N-5302	7NC-E-45	Prehistoric	Woodland I scatter
N-5304	7NC-D-64	Prehistoric	Lithics
N-5305	7NC-D-65	Prehistoric	Lithics
N-5306	7NC-D-66	Historic	Late historic stoneware and cut nail
N-5307	7NC-D-67	Prehistoric	Nondiagnostic
N-5308	7NC-D-68	Historic	Late historic scatter
N-5309	7NC-D-69	Historic	Thomas Ogle's gravesite
N-5310	7NC-D-70	Prehistoric	Archaic and Woodland I scatter
N-5311	7NC-D-71	Prehistoric	Scatter
N-5312	7NC-D-72	Prehistoric	Woodland I lithic reduction station
N-5313	7NC-D-73	Prehistoric	Lithic scatter
N-5314	7NC-D-74	Prehistoric	Possible transient camp
N-5315	7NC-D-75	Prehistoric	Woodland I transient camp
N-6264	7NC-E-46	Prehistoric/Historic	Woodland I staging-processing site; early 19th-century farm complex
N-7845	7NC-E-53	Prehistoric/Historic	Scatter
N-9355	7NC-E-57	Prehistoric	Woodland I lithic reduction site
N-9356	7NC-E-58	Prehistoric	Indeterminate cobble reduction site
N-9357	7NC-E-59	Prehistoric	Woodland I
N-9358	7NC-E-60	Prehistoric	Woodland I and II campsites
N-9359	7NC-E-61	Prehistoric	Woodland I and II procurement site
N-9360	7NC-E-62	Prehistoric	Procurement site
N-9361	7NC-E-63	Prehistoric	Woodland II base camp

TABLE IV-3 Continued

State CRS #	BAHP Site #	Period	Cultural Affiliation, Site Type, and Comments
N-9563	7NC-E-54	Prehistoric/Historic	Woodland I and II base camp; 19th/20th-century house site
N-9593	7NC-E-67	Prehistoric	Woodland I and II base camp/procurement site
N-9594	7NC-E-68	Prehistoric	Woodland I and II base camp/procurement site
N-9595	7NC-E-69	Prehistoric	Woodland II procurement site
N-9596	7NC-E-70	Prehistoric	Procurement/processing site
N-9597	7NC-E-71	Prehistoric	Lithics reduction site
N-10290	7NC-F-61	Prehistoric	Woodland I lithics
N-10294	7NC-E-76	Prehistoric/Historic	Woodland II campsite; 17th/18th-century burial
N-10305	7NC-E-79	Prehistoric	Nondiagnostic
N-10889	7NC-D-122	Prehistoric	Lithics
N-10892	7NC-D-126	Historic	18th-to-20th-century inn site
N-10893	7NC-D-127	Historic	19th/20th-century house site
N-10894	7NC-D-128	Historic	19th/20th-century house site
N-11071	7NC-D-105	Historic	19th/20th-century farmstead
N-11174	7NC-D-141	Historic	Mid-19th-century farm site
N-11712	7NC-D-124	Historic	19th/20th-century farm site
N-11713	7NC-D-135	Prehistoric	Woodland I and II site
N-11714	7NC-D-136	Historic	18th-century farm site
N-11715	7NC-D-137	Prehistoric	Archaic (bifurcate) and Woodland I campsite
N-11717	7NC-D-139	Historic	Early 20th-century farm site
N-11718	7NC-D-140	Prehistoric	Scatter
N-11719	7NC-D-142	Prehistoric	Lithics
N-11720	7NC-D-143	Historic	Two mid-19th-century farm sites
N-12512	7NC-E-99	Prehistoric/Historic	Lithic scatter; 19th-century scatter
N-12513	7NC-E-100	Prehistoric/Historic	Lithic scatter; 19th-century scatter

Highlighted sites are within project area and appear on Figure IV-7

The sensitivity of the project area for Native American sites can be assessed on the basis of regional settlement models. Previous investigations of the High Coastal Plain zone have identified environmental variables important in the location of prehistoric sites in northern Delaware (Catts et al. 1988; Catts et al. 1989b; Custer and Bachman 1986; Lothrop et al. 1987). Custer and Bachman (1986) evaluated the importance of access to surface water, elevation, topographic setting, aspect to cardinal directions, and soils as predictors of prehistoric site locations. Predictive factors for prehistoric settlement in northern Delaware appear to include proximity to surface water and productive swamp, marsh, and bog areas. For example 90 percent of recorded prehistoric sites in the region are within 100 meters of surface water (Custer and Bachman 1986:131).

Areas of well-drained soil with access to surface water are considered to have the highest potential for yielding remains of Native American occupation. Settings in the project area that would have a high potential for containing prehistoric occupation sites are the Christina River valley and Churchmans Marsh, where the greatest variety of resources would have been available for exploitation. The types of sites expected to occur in these locations include both base camps and procurement sites. In contrast, upland and/or interior areas at a distance from water are considered to have a lower potential for locating archaeological sites as these environments would have been utilized principally for resource procurement and small encampments, types of activities that would rarely leave extensive artifact concentrations. Where sites are found in these upland/interior settings, it is anticipated that they will be small scatters with mixed or nondiagnostic components.

Another setting of high site potential for prehistoric sites is the location of lithic outcrops that may have provided sources for stone tools. Sites associated with outcrops away from sources of water are expected to contain evidence of quarry and lithic reduction activities. Where lithic sources are found near locations suitable for habitation, such as cobble beds in streams, evidence of lithic reduction and tool manufacturing would be associated with other site activities. Areas associated with the flanks of Iron Hill and stream crossings are considered to have high potential for archaeological sites because of access to lithic sources. Field testing is necessary within areas of high prehistoric site potential to determine the presence of sites and/or provide assessments of previous disturbance that would affect site preservation.

The patterns of colonial and early historic settlement were guided by land-use constraints similar to those on which prehistoric settlement was based. As with Native American sites, environmental variables such as topography and access to surface water were significant. Not surprisingly, the first colonists settled on well-drained, level, and fertile soils, which were located close to creeks, ponds, or rivers. Custer and Bachman (1986:184-185) found that, on average, 66 percent of soils found surrounding agricultural farmsteads dating from the eighteenth and nineteenth centuries were classified as agricultural capability class I. In addition, 50 percent of all historic sites were within 200 meters of surface water and 75 percent were within 300 meters.

Models for historic settlement have also focused on the relationship between sites and access to transportation networks. Settlements in the seventeenth and eighteenth centuries relied on watercourses for transportation, communication, and commerce and were, therefore, located close to navigable water. As the landscape filled with people, roads soon became important avenues of interaction between drainages and interior and coastal areas. The introduction of canals and railroads in the nineteenth century added new dimensions to transportation that affected patterns of settlement.

Other environmental factors influenced the location of historic industrial sites, such as sawmills, gristmills, and iron furnaces, including access to power and raw materials. For example, water-powered mills require a setting, either natural or human-modified, that provide sufficient water fall to turn a water wheel. Once established, industrial sites became the focus of other settlements such as housing, schools, and churches.

While settlement models define areas of general resource sensitivity for the early historic period, specific locations of historic sites, particularly from the nineteenth and twentieth centuries, can be determined from deeds, atlases, and maps.

Based on these models and examination of historic cartographic sources, several broad areas of the Delaware Turnpike project area have the potential to contain historic archaeological resources. The areas of sensitivity for seventeenth- and eighteenth-century sites, particularly farmsteads, are locations on or near fertile soils and close to sources of surface water.

The majority of National Register eligible sites in the project area (see Table IV-2) may also contain undocumented archaeological components. Seven historic farmsteads in the project area appear to have the potential for archaeological resources. These are the Thomas Montgomery House (N-1601), the Lewis Weldin Farmhouse (N-6783), the Peters Family farm at 191 Chapman Road (N-6775), the Henry L. Churchman House (N-1603), 241 Chestnut Hill Road (N-12872), 338 Chestnut Hill Road (N-12867), and 180 Welsh Tract Road (N-12868). In addition the W. Brooks House (N-3991), is a mid-nineteenth-century farmhouse that burned in 1978. This property is now considered a historic archaeological site with potential to provide information on rural occupation. Archaeological remains at these rural farm sites may include outbuildings, wells, privies, and refuse deposits.

Several historic archaeological components of the Cooch's Bridge Historic District (N-190), which is listed on the National Register, are located within the project area. They include the possible ruins of Abington (or Abingdon) Iron Works, an early eighteenth-century foundry; a dam associated with the 1792 William Cooch iron mill; and a portion of the "Retreat Road," or Old Cooch's Bridge Road, which was used by American forces to retreat from British troops in 1777 during the only Revolutionary war battle fought in Delaware. These elements require testing and evaluation to determine archaeological preservation and significance. The area may also contain sites of earlier mills, forges, and furnaces established by Welsh settlers in the first decade of the eighteenth century in the region known as "Iron Hill" (Heite, Norton, and Troy 1972).

The Welsh Tract Baptist Church and Parsonage (N-264) was part of a larger complex established by Baptist settlers within the Welsh Tract during the middle of the eighteenth century. Although listed on the National Register for its historical and architectural significance, the property also retains historical archaeological potential.